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manufacturers record

THE NEWSMAGAZINE OF SOUTHERN SCIENCE AND INDUSTRY

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"The Voice With a Smile" in the telephone Business Office

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BELL TELEPHONE SYSTEM

nufacturers record

NEWSMAGAZINE OF SOUTHERN ENCE AND INDUSTRY—EST. 1882

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BPA

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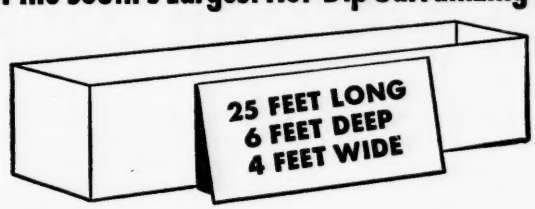

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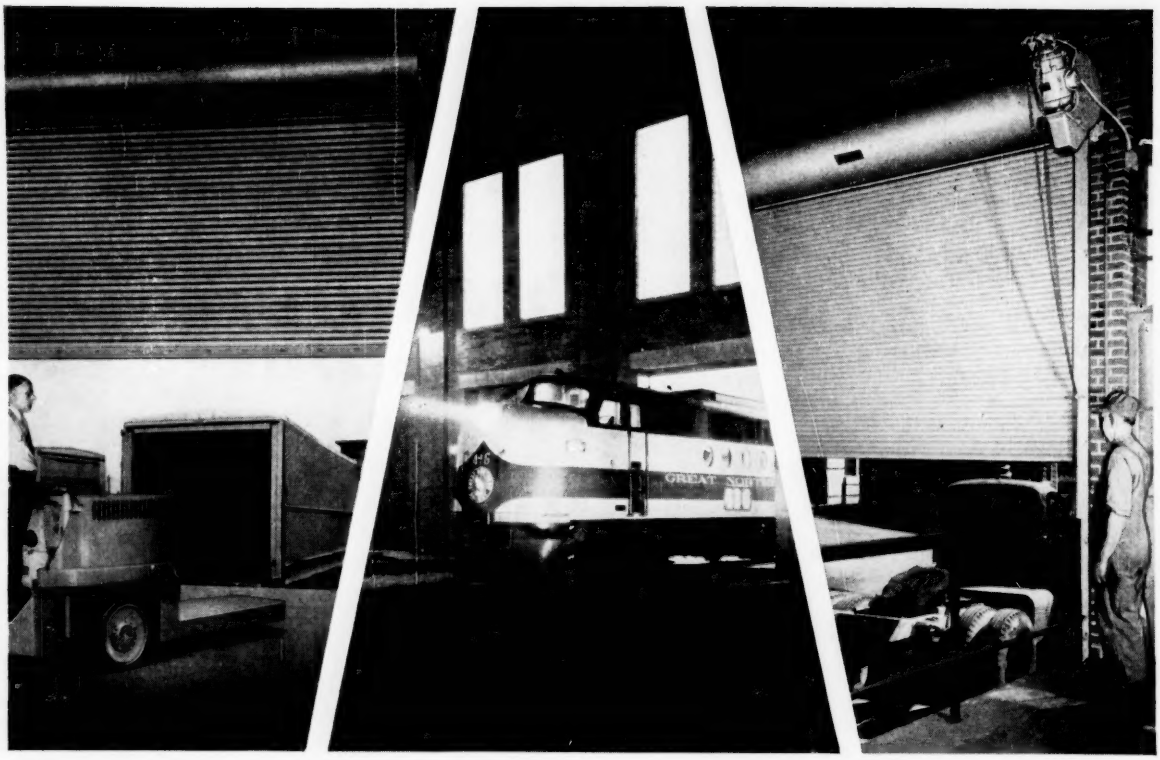

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EDITED BY
Richard Edmonds..1882-1930
Frank Gould.....1930-1943
William Beury ...1943-1955
McKinley Conway..1956-

MANUFACTURERS RECORD (IN REVIEW)

"What Enriches The South Enriches The Nation"

JANUARY, 1883 (AS ABSTRACTED MORE THAN 70 YEARS LATER) BALTIMORE, MD.

ELECTRIC LIGHT FOR MILLS

Light for light, the electric light is cheaper even than coal-oil gas, although a comparison is difficult because the change of illumination is always made an excuse for more light.

Most mills are lighted with coal-oil gas mixed with air, which costs from seventy-five cents to one dollar per burner, or in exceptional circumstances sixty-nine cents; while the cost rises inland to one dollar and seventy-nine cents. As an important share of the cost of electric lighting is interest on plant, the relative cost in its favor is much decreased when mills are running night and day.

MANUFACTURING

The Old Dominion Iron and Nail Works, at Richmond, Va., have completed and lately started their steam puddle mill. This mill is an auxiliary of the great water-power owned by the company, and is expected to supplement the James River in seasons of drouth like 1881. The mill has ten double puddle furnaces and six batteries of boilers, with a 300-horse-power engine and every appliance known to rolling-mill practice for cheapening and increasing production.

As soon as the machinery can be placed in position, the spoke and hub factory at Dalton, Ga., will average about 4,000 spokes per day.

Forber & Gant, Hopkinsville, Ky., have manufactured 523 Excelsior wagons this year, and have built a large planing mill at Bowling Green, in the same state.

The Tanner & Delaney Engine Company of Richmond, Va., are finishing up their new and extensive buildings, which are said to be equal to any in the country for the manufacture of machinery. The demand from the South upon Richmond manufacturers for engines, boilers and other machinery is reported to be very active.

K. J. Woods will soon set about the establishment of a cotton gin manufactory in Eufaula, Ala., and will have a foundry, machine shops and wooden works in connection therewith.

ADVICE REGARDING NEW MILLS IN THE SOUTH

A correspondent of the South, in giving advice as to the establishment of new mills in the Southern States, says "parties wishing to embark in this business in the South would do well to first make a careful investigation and select a locality where they can have access to an unlimited amount of stock to select from and good competing facilities for transporting goods to market. This much accomplished, look well to a mill site where an abundance of good soft water may be had at all seasons of the year for washing, scouring and dyeing purposes. A novice would hardly imagine the importance of the right kind and supply of water, but it is an absolute necessity to a success in the business. The locality should be one where help would be plenty and available without having to transport operatives from a distance.

Having achieved these points, put up your mill. Do not spend any money on fancy or show, but on the other hand put up a good, solid building in which your machinery can stand firm and be run at a good rate of speed without jarring the mill or making the machinery run unsteadily. Have your mill high between joists and well lighted. So much accomplished, you are now ready to select your machinery, and if you would compete with your neighbors, purchase the very best the market affords; not that we mean such as might cost the most money, but the kind that will produce the most and best quality of goods from a given amount of stock in the shortest time, with the least number of hands to work the same.

Ed. Note: We have found the archives of MANUFACTURERS RECORD to be a "gold mine" of information covering the industrialization of the South. Believing that our readers will be interested in these glimpses of the past, we are introducing in this issue this review page which will henceforth be a regular feature. Both editorial items and advertisements are reproduced just as they appeared in the RECORD more than 70 years ago.

AN IMPORTANT ASSOCIATION

An association of Southern cotton manufacturers was organized some days ago in Atlanta, Ga., with Major J. F. Hanson, president, and F. B. Dallas, secretary. A circular was issued to all cotton manufacturers of the South calling upon them to come into the association, for mutual improvement and protection.

A Letter To The Editor

As you, Mr. Editor, have been somewhat exercised on the wood pulp question, it may be of interest to state that the Barrett Manufacturing Company are now engaged in making paper from the native pine tree, and the process has been so simplified that a green, vigorous pine growing in its symmetrical beauty and virgin innocence in the morning appears the next day covered with the records of crime and congressional doings, as a newspaper upon which this record is imprinted. A piece of the pulp is now before me, and it bears as little of the appearance of the sturdy pine as the rags of the Miami Valley paper mills to the flowing draperies of the Fourth street belles. The Barrett Company are supplying newspapers all over the South and West at a cheaper price, it is claimed, than any other paper mill in the country.

(Name Not Given)

An Editorial

With this first issue in the new year, the MANUFACTURERS RECORD presents its greetings to subscribers and trusts that 1883 may bring them both peace and plenty. The year just ended has been one of much profit to us. Not only has business been very good from a financial standpoint, but, what is equally gratifying, the RECORD has become acknowledged as the leading manufacturing paper of the South.

We are not in the habit of boasting of ourselves, preferring that others should do that for us, but it may not be inappropriate at the beginning of the new year to say that the RECORD is the best advertising medium published to reach all classes of manufacturers such as cotton mills, woolen mills, iron works, mining companies, foundries and machine shops in the entire South.

The *Southern Industries,* of Nashville, Tenn., is one of the many papers of the country that is devoid of all conscience in the matter of republishing articles from its contemporaries without any credit therefor.

The Largest Firms in the Country are using this Elevator.

JAMES BATES,

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Orders from every section of the country are received daily for them.

GOOD INVESTMENT

A capital investment of **$461,000,000** was made in plant additions by the investor-owned operating companies of The Southern Company system from January 1, 1950, through July 1, 1955. The necessity for providing this tremendous increase in electric power facilities is further evidence of the striking economic growth of our service area.

During this same five and a half year period, new large industrial plants made capital investments of **$484,540,000** in our four-state service area. (*Additions to existing plants, service institutions and plants investing less than* **$50,000** *are not included.*)

Together, these industrial plants and The Southern Company system spent nearly one billion dollars for new facilities in this area.

Capital investments of this nature stencil in bolder and bolder letters, "GOOD INVESTMENT" on our service area where you'll find a favorable climate for working, living and recreation.

Shaded section designates area served by the four investor-owned electric power companies in The Southern Company system.

Alabama Power Company
Birmingham, Alabama
Georgia Power Company
Atlanta, Georgia

Gulf Power Company
Pensacola, Florida
Mississippi Power Company
Gulfport, Mississippi

"Under New Management"

With this issue, the RECORD appears under new management, and we think it is in order to outline our editorial thinking.

First, we offer assurance that we will continue the basic policies which the RECORD has evolved over a period of 73 years. Both the prestige and the longevity of the RECORD attest to the soundness of its editorial position.

We, too, are firm believers in the American enterprise system and will advocate it without apology.

We do not propose to take sides in partisan political campaigns, but we will inevitably find ourselves allied with those who believe in *dynamic* conservatism. We will find little common ground with advocates of creeping socialism or ultra-conservatism.

It would be impossible, of course, to give detailed views on all the topics of concern to our audience in this first statement. However, a few points will indicate the approach which will be taken to a variety of matters in future numbers.

The RECORD has long carried the motto "What Enriches the South Enriches The Nation." We certainly endorse the thinking that southern progress does not and should not come at the expense of other regions.

Further, we will devote our efforts toward achieving a better appreciation of the South in other sections. For the South is still the most misunderstood of all the regions of the nation.

We cannot foresee any set of conditions in which we will not be extremely optimistic about the industrial future of the South. Almost every significant economic index affords reason for this happy outlook.

But this does not mean that we will ignore situations that can and should be improved. We realize that industrial growth does not occur without difficulty.

We will, for example, make frequent references to the subject of water conservation and development. Stated briefly, our philosophy is "use but not abuse" of our streams.

Similarly, we will demonstrate continuing interest in such matters as industrial planning and zoning. We believe new plants can be as great an asset to urban areas as units of a college campus if they are properly planned.

We will, of course, promote all factors which influence the expansion of industry in the South. We refer to such matters as transportation services, utilities, government services, and labor productivity.

Perhaps our greatest emphasis will be on the study and development of the resources—both human and material—of the region. This has long been a point of emphasis for the RECORD and also for the Southern Association of Science and Industry.

We believe the road to success for the South lies in using our brains more than our brawn, both literally and figuratively.

Thus, expansion of basic and applied research will be a prime objective. Technology must play an ever-increasing role in the economic life of the region.

Special attention will be devoted to the "growth" industries, such as atomic energy, chemicals, electronics, and light metals. We will also be particularly interested in exploration for new minerals and other raw materials.

And we will carry on a constant crusade for more intensified market research in the South. Thus, our interest lies in the development of products and processes from origin to final use.

Finally, we hope to bring about closer cooperation between the hundreds of organizations working in various ways to advance the economy of the South. We will maintain close liaison with the Southern Governors Conference.

And we hope to present our views in a style which has been called "scholarly but not stuffy."

Readers will note that we have already made a number of changes in format and layout. These changes, such as increase in size of body type, are designed to increase readership and facilitate use by busy executives.

Further changes will be made whenever we feel that reader interest will be better served.

In short, we're going to do our best to publish a magazine that will win the approval of the majority of our readers. In this connection we're reminded of the comment Benjamin Franklin made when he launched his Dogood Papers in the early 1720's:

"I am not insensible of the impossibility of pleasing all, but I would not willingly displease any; and for those who take Offence where none is intended, they are beneath the Notice of Your Humble Servant."

—H. M. C.

Our Sincere Thanks To Dick Harwood

It is not an easy matter to move a publication which has been issued in one place for more than 70 years. There are many problems inherent in combining two groups in different locations.

But the job of moving the RECORD's headquarters to Atlanta and reorganizing the operation has been made immeasurably easier by Dick Harwood, Vice President of MANUFACTURERS RECORD Publishing Company. Dick made the transition smoother by volunteering his complete cooperation on every planning detail.

Dick has chosen to remain in Baltimore, which is his home. But we know he parts with the RECORD reluctantly. The publication becomes a part of all who are associated with it.

We know Dick will be successful in whatever he undertakes. We know the RECORD's readers join us in wishing him the best of luck.

We suggest . . .

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REFERENCES

(1) Ind. Eng. Chem. 25-653 (June, 1933)
(2) Ind. Eng. Chem. 25-1112 (Oct., 1933)
(3) National Bureau of Standards Journal of Research 12-241 (Feb., 1934, R. P. No. 649)

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LETTERS

SIRS: I was certainly delighted to hear of your purchase of the MANUFACTURERS RECORD and the BLUE BOOK OF SOUTHERN PROGRESS in Baltimore. This has always been an outstanding southern publication, and in your hands I know that it will move forward on an even broader basis.

EDWIN COX, Vice President
Virginia-Carolina Chemical Corp.
Richmond, Va.

SIRS: I was indeed pleased to learn of your purchase of the MANUFACTURERS RECORD and the BLUE BOOK OF SOUTHERN PROGRESS. I am sure that these will be very valuable additions to your stable and that you will add greatly to their already illustrious background, not to mention the real value that these will be to SASI.

BLANTON M. BRUNER
American Tobacco Company
Richmond, Va.

SIRS: I am hastening to congratulate you on your acquisition of the MANUFACTURERS RECORD. This has long been an outstanding publication which has had much to do with building up industry in the South and I am sure that under your aggressive management, it will produce still greater results.

E. K. GAYLORD, Publisher
The Daily Oklahoman
Oklahoma City

SIRS: I can't tell you how delighted I am to learn of your acquisition of the MANUFACTURERS RECORD. In my estimation, this is an event of high importance to the entire South. I am sure that under your able direction, the combined influence of this and your other periodicals will enrich our area and be of tremendous benefit to all of us in the industrial field.

W. C. COLEMAN, Vice President
C & S National Bank
Columbia, S. C.

SIRS: In purchasing the MANUFACTURERS RECORD and the BLUE BOOK OF SOUTHERN PROGRESS you have certainly acquired publications that will immensely help with the promotion of your objective. I wish you every success in this new venture.

J. D. WISE
Wise Motor Co.
Hazelhurst, Miss.

SIRS: Congratulations and best wishes to you and your associates.

DICK PRIESS
Southern Power & Industry
Atlanta, Ga.

SIRS: I want to congratulate you on your buying the MANUFACTURERS RECORD, and I am sure you can make a whale of a success of this magazine.

AL E. SHARP
Liller, Neal & Battle
Atlanta, Ga.

SIRS: I congratulate you upon your purchase of the MANUFACTURERS RECORD and the BLUE BOOK. I know that, under your management, the two publications will gain added distinction.

B. S. GRIFFITH, General Mgr.
The Charlotte News
Charlotte, N. C.

SIRS: It seems to us that by combining these publications with your own group this will certainly amount to a more potent influence in behalf of the South.

W. PORTER GRACE, Vice Pres.
Union Planters Natl. Bank
Memphis, Tenn.

SIRS: This union of two vital forces for industrial development in the South should prove of benefit to the region and we are looking forward to cooperation with you in any way that we can.

CHARLES PARKER,
State Adv. Dir.
N. C. Dept. Cons. and Dev.
Raleigh, N. C.

SIRS: This will be a splendid acquisition. All your friends congratulate you and wish you the success you so well deserve.

CHERRY L. EMERSON
A. Thomas Bradbury & Associates
Atlanta, Ga.

SIRS: May I congratulate you on your vision and foresight. It is one of the nation's best publications, and it is finding its way into the hands of a mighty good publisher. The best of wishes to you.

HUGH S. AHERN
U. S. Dept. of Commerce
Atlanta, Ga.

SIRS: Congratulations upon acquiring the MANUFACTURERS RECORD and Allied Publications. Your success story is as interesting as any which has developed in the South in recent years.

MENDELL M. DAVIS,
General Mgr.
Jackson Chamber of Commerce
Jackson, Miss.

SIRS: Congratulations and best wishes on your recent purchase of the MANUFACTURERS RECORD. We know that your leadership will enhance the old publication and are delighted to see your expansion in this field in which you have done a superb job.

ALLAN C. MUSTARD
S. C. Electric & Gas Co.
Columbia, S. C.

SIRS: It seems to me that the new set-up is an excellent one for MANUFACTURERS RECORD and for you. MANUFACTURERS RECORD has always, in my opinion, been a fine publication, but I feel sure that you will be able to introduce many progressive ideas which will make it a more valuable publication in every way.

J. M. BARRY, Chairman
Executive Committee
The Southern Company
Birmingham 2, Ala.

SIRS: Many congratulations are due for purchase of the Manufacturers Record Publishing Company. This is a fine publication as far as history goes but one that needed the kind of new blood and life you can give it going ahead.

JIM FURNISS, Vice Pres.
C & S National Bank
Atlanta, Ga.

► We sincerely appreciate these and other messages received from readers of INDUSTRIAL SOUTH and the RECORD. With such fine support we are confident that we can produce a publication of which all can be proud.

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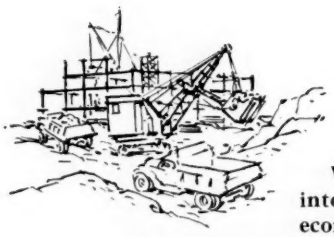

Where populations soar into huge numbers, the economic contributions of a plant employing 50 to 100 workers can easily be overlooked. ***But in smaller communities, these contributions are big, visible and really appreciated.***

For example, one of the towns along the N & W which is typical of these fine, smaller communities, has a population of 9,500. It offers an abundant water supply, excellent climate, nearby natural resources, plenty of skilled and unskilled home-rooted labor and excellent industrial sites at fair real estate values. Such towns roll out a big welcome carpet to manufacturing, large or small, because they know that *every additional 100 factory workers will:*

bring the community $590,000* more personal income per year —

add $270,000 more in bank deposits —

produce $360,000 more in annual retail sales —

and add 296 more people who will vote, pay taxes, support churches and charities, and make an all-around stronger community.

Communities along the N & W offer important advantages for efficient manufacture and distribution — *plus an appreciative and cooperative public.* Let our plant location specialists tell you about ideal plant sites in such communities . . . in confidence and without obligation.

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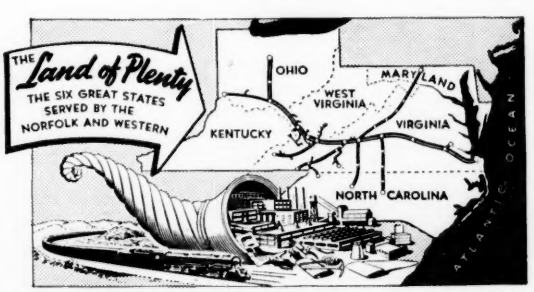
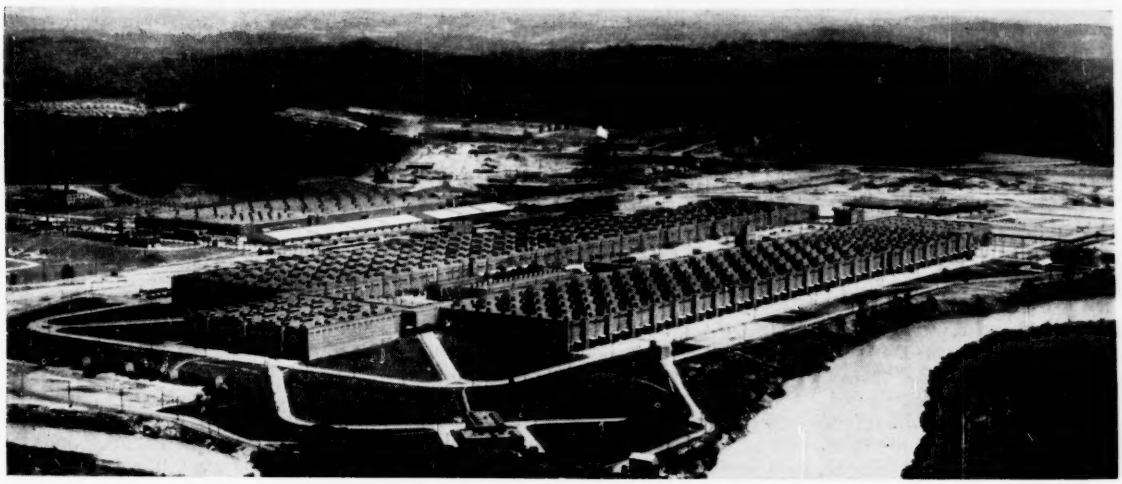
Norfolk and Western RAILWAY

Transportation is a major factor in good plant location. Consult your traffic manager when you're choosing a plant site. He's a transportation expert.





BIRTHPLACE of the South's atom industry is this huge gaseous diffusion plant built at Oak Ridge during World War II. Still one of the largest continuous process plants in the world, it has a roof area of 60 acres. Each side of the giant "U" is one-half mile long and four stories high.

The Atom—Multi-Billion Southern Industry

Atomic energy, still in its infancy, is already a multi-billion dollar industry in the South.

That nuclear installations in the region already involve an investment of more than $3 billion is indicated by a survey of Southern research, development and production activities in the booming atomic field.

For the atom today is responsible for a variety of mushrooming enterprises important to the economy of all the states from Maryland through Texas. More important, intensive research programs now underway offer even greater things to come.

The atomic industry in the South, of course, had its start at Oak Ridge during World War II. It was in 1942 that the AEC acquired nearly 60,000 acres in Anderson and Roane counties.

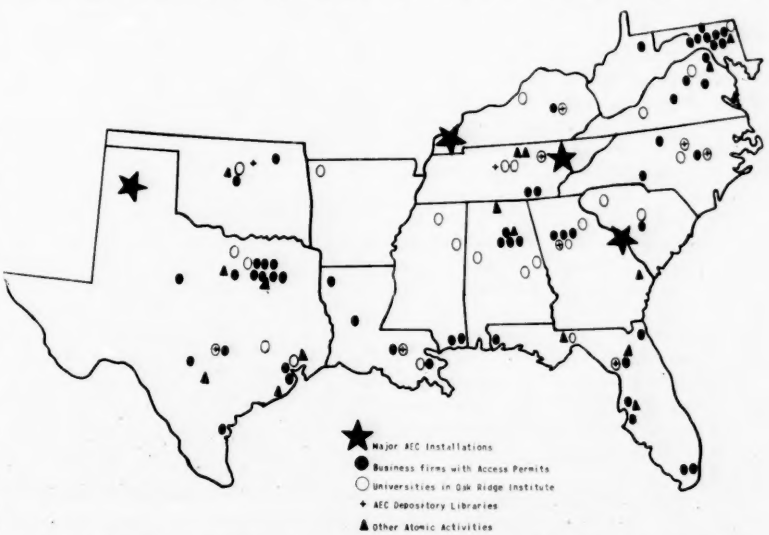
In a little more than 12 years Oak Ridge has changed from a quiet East Tennessee countryside to an internationally famous and significant center of scientific and industrial activity. Today the community has a permanent population of about 32,000.

The operating facilities are the gaseous diffusion plant for the production of U-235; the Y-12 area for programs of special interest to the AEC, the production of stable isotopes, and research on process improvements; and Oak Ridge National Laboratory, nuclear research center and source of most of the nation's radioactive isotopes. This unit served during World War II as a pilot plant for the huge plutonium process buildings constructed at Hanford Engineer Works in the state of Washington, now known as the AEC's Hanford Operations Office, Richland, Washington.

The three principal facilities at Oak Ridge are operated for the AEC by Union Carbide Nuclear Company, formerly Carbide and Carbon Chemicals Company, a Division of Union Carbide and Carbon Corporation.

Near the gaseous diffusion plant is a high-temperature, high-pressure, variable-frequency steam power plant with a generating capacity of 238,000 kilowatts—twice the capacity of Norris Dam.

The Oak Ridge Area also is headquarters for the Oak Ridge Institute



MAP COMPILED from SASI files shows the location of major atomic facilities in the South. Black circles indicate business firms which have recently received access permits to utilize classified AEC data in private projects. Map does not include all research laboratories using radioisotopes.

of Nuclear Studies, Inc., an organization of 34 member universities in the South and Southwest. The objective of ORINS is a program of assistance to universities in developing strong graduate and research programs in nuclear energy. The Institute also is available in an advisory capacity to the Commission on programs for fundamental research in atomic energy.

In addition a variety of other nuclear activities have sprung up at Oak Ridge in recent years. Abbott Laboratories, a pharmaceutical manufacturing concern, has located a plant there for the processing of radioactive materials for nationwide distribution.

Still another noteworthy facility is the American Museum of Atomic Energy operated by ORINS. The Museum annually attracts thousands of visitors including many school groups.

It is estimated that the total investment at Oak Ridge now exceeds $1.25 billion. Current employment at Oak Ridge is about 22,000 and the total payroll for 1954 was about $170 million. And further expansion is likely:

Just a few weeks ago the AEC announced that controlled thermonuclear reactions have been under investigation at ORNL over a considerable period. This is probably the most advanced work in the nuclear field and the official announcement makes it plain that "many years of intensive effort may be required before the first prototype of an operating thermonuclear machine may be developed."

Another AEC facility which has had an enormous impact on the economy of the South is the Savannah River Plant located near Aiken, South Carolina. This plant is even larger than the Oak Ridge production facilities and is without question one of the greatest engineering projects ever undertaken anywhere.

The Savannah River project has been handled for the AEC by the DuPont Company and DuPont now operates the facility. More than 114 potential sites throughout the country were studied before final location was determined in November 1950.

Cost of construction is estimated at around $1.4 billion. The peak construction force during 1952 was 38,582 workers. The present operating force is around 8,500.

The Savannah River Plant ranks among the largest construction jobs ever undertaken. According to the Bureau of Labor Statistics comparable large scale construction jobs were: Oak Ridge, 46,600 construction workers at peak of job; Panama Canal, 45,000; Hanford Washington, 43,000; and TVA 43,000.

D. A. Miller, plant manager for DuPont, said recently that the average monthly expenditures at the Savannah River plant are about $20 million.

Of course, the prime purpose at SRP is to produce fissionable materials for use in nuclear weapons including H-bombs. The plant includes five large reactors, two chemical separation units, and a heavy water plant.

But the Savannah River Plant will soon assume a significant new role in the peaceful application of atomic energy.

R. C. Blair, manager of the AEC's Savannah River Operations Office, recently announced that arrangements have been completed for Savannah River reactors to begin irradiation of the element cobalt for use in teletherapy machines throughout the United States for the treatment of cancer.

When irradiated, cobalt, normally a stable element, emits radiation which gives medical specialists an additional tool in the fight against cancer. Participation of the Savannah River reactors in the program will help to meet an increased demand for irradiated cobalt, which previously has been produced in the United States principally in the Commission reactors at the National Testing Station in Idaho; Oak Ridge, and Hanford, Washington.

GENEVA EXHIBIT—Oak Ridge scientist Leo B. Holland describes reactor for the benefit of a prominent visitor from Washington, D. C. Oak Ridge personnel occupied key positions in the international parley.

The cobalt sources will be irradiated in the Savannah River reactors for one to two years before being removed for use in teletherapy units.

"The Savannah River Operations Office is gratified that the plant's facilities are joining in production of nuclear materials that can be used for human welfare in the rapidly expanding peacetime program of atomic energy," Mr. Blair said in announcing the new program. "It is a significant and far-reaching step."

Other key AEC operations in the South include the separation plant at Paducah, Kentucky operated by Procter and Gamble; the Pantex weapons plant at Amarillo, Texas, also operated by Union Carbide.

In addition, the AEC operates an ore-buying station at Plant City, Florida, and sponsors research programs in several dozen universities and research institutes throughout the South.

There can be no doubt, therefore, that the AEC is betting very heavily on the productivity of southern people working in a favorable industrial climate. And this investment offers the South a great advantage in launching atom-based enterprises.

In the years ahead it is likely that atomic activities carried forward by private firms will play a much more important part in the development of the region. Already, private industry is active in promoting a large number of nuclear enterprises throughout the southern states.

One of the leaders in industrial studies of atomic energy in the South is the Newport News Shipbuilding and Dry Dock Company headed by J. B. Woodward, Jr., Board Chairman. Woodward is a key official of the Atomic Industrial Forum.

NNSDC is already conducting extensive research in its laboratories in the use of atomic power in ship propulsion. The company has a contract with Westinghouse for assistance in arrangement, shielding and other features for the prototype plant for a large ship reactor.

Other activities in atomic power for ships which are under contracts with

Federal Agencies include a design study of a nuclear-powered naval capital ship and a study to determine the best design of a nuclear power plant for a class of merchant ships to be selected on the basis of economic factors.

NNSDC has established an Atomic Power Division which already includes a staff of nucleonic engineers and other specialists. In addition to other projects the group is heavily engaged in AEC's Homogenous Reactor Project.

Davison Chemical Company of Baltimore has established a subsidiary Rare Earths, Inc., to conduct a program of research and development of rare earths and thorine. The latter can be transmuted into fissionable uranium-233 and as such may be used in industrial power plants.

To further promote Davison's interests in the industrial atomic field, an Atomic Development Department has been established in Baltimore. Dr. Allen T. Cole, formerly manager of the company's Phosphate Division in Bartow, Florida, has been named departmental manager.

At Fort Worth, the Convair Division of General Dynamics Corporation has received a contract to build a nuclear reactor. Moreover, Convair is said to be building the airframe for the first nuclear-powered airplane.

Babcock and Wilcox has announced plans for a $2 million fuel element fabrication facility near Lynchburg, Virginia. And Glenn L. Martin Company is developing an advanced military package power reactor at Baltimore.

Alco Products, Inc., of Schenectady, New York, has recently begun work on the Army package power reactor project at Fort Belvoir, Virginia. The latter plant will generate about 2,000 kw. for use in normal post operations at Belvoir.

The package plant is designed so that components can be airlifted to remote sites. After assembling, this type of plant is expected to operate for extended periods without refuelling.

More than 50 southern firms have during the past year received access permits from the AEC to enable them to receive classified data related to civilian uses of atomic energy. Presumably each of these firms has plans for entering some phase of atomic energy utilization.

Among the southern companies cleared for nuclear work are a large number of private utilities concerned with energy generation. Utilities in

LATE NEWS HIGHLIGHTS

ATLANTA. Lockheed Aircraft Corporation has announced that it will undertake preliminary design studies on nuclear-powered aircraft in its Marietta, Georgia, plant. The Corporation has purchased 140 acres at Marietta for a multi-million dollar facility. Transfer of personnel from Burbank, California, will take place in mid-1956.

KNOXVILLE. Rumors have it that Tennessee will soon get a new cement plant to cost from $10 to $12 million. The new unit, to locate in Nashville or Knoxville, is said to be under consideration by Lambert Brothers, headed by Walter Lambert, president.

NEW YORK. American Cyanamid has announced plans for two new plants in the South. They include a liquid alum plant in Plymouth, North Carolina, and a 200,000 ton per year triple superphosphate plant at Brewster, Florida. The announcements follow on the heels of dedication of Cyanamid's new titanium dioxide plant at Savannah.

BIRMINGHAM. Alabama Power now awaits only a green light from the Alabama Public Service Commission to launch construction of a $100 million system of dams on the Coosa River. Board chairman Thomas W. Martin filed official application for a certificate of convenience and necessity in December. Public hearings will probably be held in the immediate future.

AKRON, OHIO. The nation's first postwar privately financed and completely integrated synthetic rubber operation will be built near Odessa, Texas, as a result of a multi-million dollar agreement between General Tire and Rubber Company here and El Paso Natural Gas Company. New plant is scheduled for completion in July 1957 according to General Tire president, William O'Neil.

FORT LAUDERDALE, FLORIDA. Port Everglades has already recorded 1955 as the greatest year in its history in ships and tonnage handled and in value and diversity of cargoes. In the first ten months the Port handled 579 ships with a total cargo of more than 2.6 million tons.

ATLANTA. Delta Air Lines expects to have its first plane equipped with airborne weather radar in operation this month, president C. E. Woolman has announced. He said Delta has ordered $1.5 million worth of electronic equipment for installation in its fleet of eleven DC-7's, six DC-6's and 20 Super Convairs.

RICHMOND. An All-Virginia public relations conference will be held at Williamsburg on March 15 and 16 under the joint sponsorship of the Virginia State Chamber of Commerce and the Richmond Public Relations Association. Blanton M. Bruner of American Tobacco Company has been appointed general program chairman.

ATLANTA. Plantation Pipe Line Company will invest $23.5 million in an expansion program to be conducted during 1956, according to president Charles R. Younts. Included in the plans are a 327 mile, 18-inch line from Baton Rouge to Helena, Alabama.

WASHINGTON. Defense officials have revealed that the nation's top ballistics missile, "The Redstone," is being developed at Redstone Arsenal in north Alabama. Major General John B. Medaris, an ordnance authority, is being transferred to Alabama to supervise development of the weapon.

COLUMBIA, SOUTH CAROLINA. A new firm, Carolina Pipe Line Company, has been organized to handle a new $8.7 million natural gas system designed to serve a large portion of South Carolina. Plans for the project were announced here by R. M. Cooper, director of the State Devlopment Board.

most of the southern states are included. Other cleared firms represent a variety of interests. Among them are Adams Engineering, in Miami; Ethyl Corporation, Baton Rouge; W. R. Grace, Baltimore; Lynchburg Foundry, Lynchburg, Virginia; Ingalls Shipbuilding, Pascagoula, Mississippi; Magnolia Petroleum, Dallas; and Humble Oil and Refining, Houston.

In addition, the atomic resources of the South have attracted a variety of "satellite" industries. These include plants supplying specialized materials and nuclear instrumentation.

Savannah River Project Yardstick

The immensity of th[illegible] AEC fissionable materials plan[illegible]flected in these statistics:

1. The 126,000 carloads of materials required would, if placed in a single giant train, reach from Atlanta to the Pennsylvania Station in New York.

2. The 39,149,842 cubic yards of dirt to be excavated is equivalent to a wall ten feet high and six feet wide extending from Atlanta to Portland, Oregon. The 39,149,842 cubic yards is approximately one-sixth of the 220,538,000 cubic yards required in digging the Panama Canal.

3. The 1,452,482 cubic yards of concrete to be poured is around one-third of the total concrete poured (4,400,000 cubic yards) in the Grand Coulee Dam.

4. The 85,000,000 board feet of lumber required could build 15,385 houses, enough to house a town of 46,155 people (three to a house).

5. The 118,449 tons of reinforcing steel required is equivalent to 3,308 railroad carloads, or a train thirty miles long.

6. The 2,000,000 blueprints required is equivalent to a roll of paper 24 inches wide and would reach from Atlanta to Seattle (2,000 miles in a straight line).

7. The 200,646 acre plant is one and one-half times as large as the City of Chicago and four times that of metropolitan Washington, D. C.

8. The estimated $1,400,000,000 needed to build the plant exceeds by $625,000,000 the total volume of deposits in all banks in South Carolina during 1950.

UTILITY EXECUTIVES H. J. Scholz (left) and Thomas W. Martin (center), hear reactor specialist Ruble Thomas discuss features of atomic power plant in which the Southern Company is interested. The Southern Company is the parent firm of the Alabama, Georgia, Mississippi and Gulf Power Companies.

Just recently the Norton Company of Worcester, Massachusetts, announced a $1.3 million plant to be located in Huntsville, Alabama. The new unit will manufacture fused magnesium, fused zirconium, boron carbide, and special materials for the AEC.

A number of companies in the South are developing electronic apparatus needed in radioactive isotope utilization. One firm has developed experimental static electricity eliminators and another is making delicate beta ray thickness gauges.

Typical of the rapid growth of such small firms is the case of Radiation, Incorporated, at Melbourne, Florida. Started only a few years ago by a University of Florida graduate the firm has already expanded into its second plant.

Probably the first major use of atomic energy for purely commercial purposes in the South will be the generation of electric power. In this field the Southern Company is pursuing an aggressive exploratory program.

The Southern Company is the parent firm of the Alabama, Georgia, Mississippi and Gulf Power Companies. Its technical subsidiary is Southern Services, Inc., in Birmingham.

H. J. Scholz, president of Southern Services, is a member of the advisory group recently invited by the Atomic Energy Commission to discuss policies relative to civilian use of atomic energy. He is assisted by a staff of engineers including Ruble A. Thomas, who has been trained at the Oak Ridge School of Reactor Technology.

Scholz revealed recently in a report to Southern Company stockholders that the Southern group plans to invest a total of some $2 million over a 5-year period in reactor development. At present Southern is pooling its resources with a number of other electric utilities in investigating nuclear energy possibilities. The first unit to be undertaken by the group will be under the immediate jurisdiction of the Detroit Edison Company.

While the major supplies of raw materials for the atomic industry still are found in the West, the South is producing an appreciable amount of uranium ore. AEC has worked with the phosphate industry in Florida to provide for production of uranium as a byproduct. International Minerals and Chemicals moved into this field early with a $15 million plant and other firms are following.

While there are no processing plants operating yet, field surveys have indicated the possibility of uranium production in other parts of the South. The Chattanooga shale found in eastern Tennessee has received extensive study.

More recently, newspapers reported a uranium discovery in Louisiana and there has been wide-scale prospecting in Texas and Oklahoma. The possibility of recovering uranium in oil well drilling operations has attracted considerable interest.

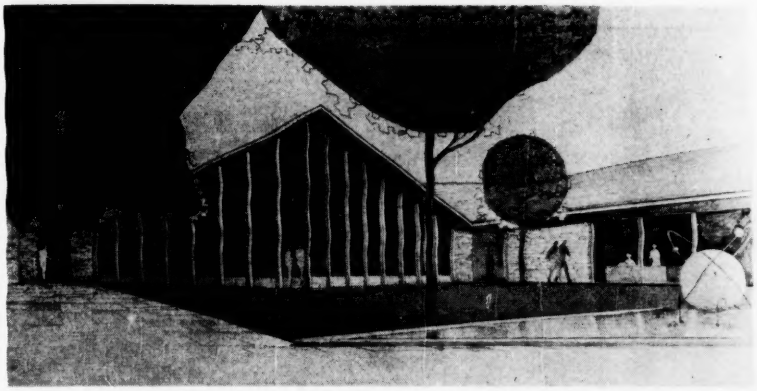
From a long-range viewpoint the most important nuclear activities in the South today are the extensive research programs conducted both in AEC laboratories and in other institutions. Oak Ridge, of course, is the fountainhead of technological know-how in the field and constitutes one of the South's most valuable resources.

It is significant that the reactor exhibited by the U. S. Government at the recent Geneva atoms conference was built at Oak Ridge. Moreover, Oak Ridgers played an important role in planning the Geneva conference and contributed a number of technical papers.

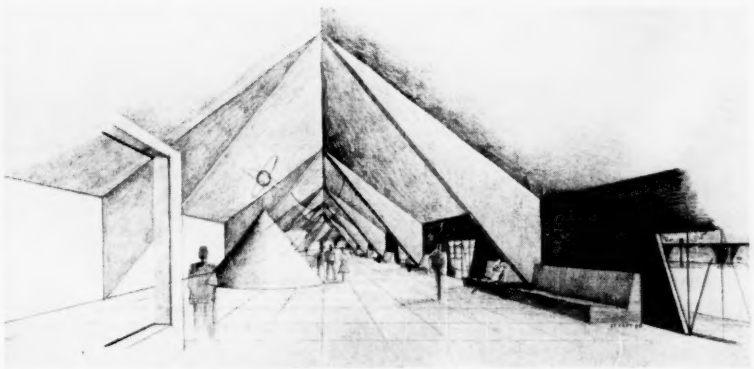
Of the 25 papers judged to be the most important contributions at the international meeting four were contributed by Oak Ridge scientists. And while much of the data produced at Oak Ridge is of a confidential nature there is a steady flow of unclassified information to other southern research groups.

The importance of utilizing this resource to aid in the technical advancement of the South was recognized early by Dr. William G. Pollard, and he was instrumental in organizing the Oak Ridge Institute of Nuclear studies. ORINS, founded about 8 years ago, is a non-profit organization composed of 34 southern universities. It makes available to these institutions the unique facilities and scientific personnel in the Oak Ridge laboratories of the AEC.

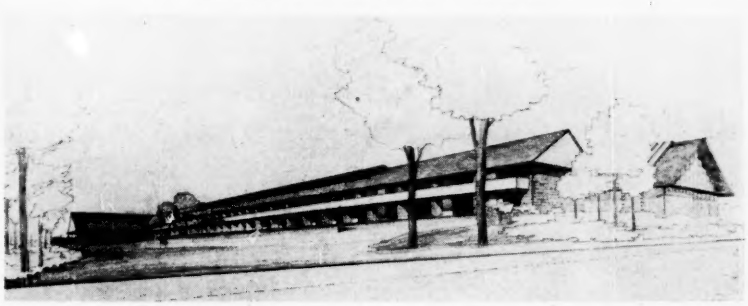
Among the many services originated



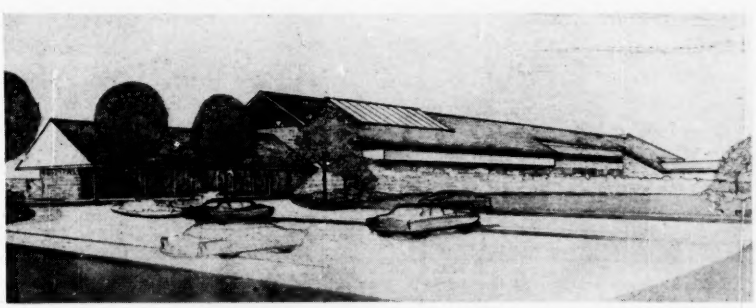
NEW HEADQUARTERS facilities being planned by the Oak Ridge Institute of nuclear Studies feature striking architectural lines. Above, theater from main court.



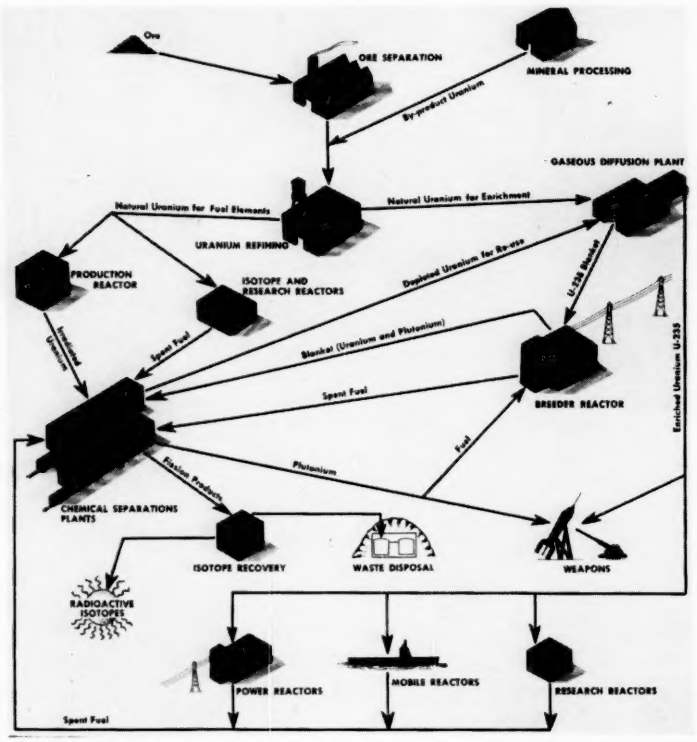
INTERIOR of the Museum of Atomic Energy.



DINING hall, dormitory, and library for visiting researchers.



HOSPITAL and medical research laboratories.



SOUTHERN INDUSTRIES are participating in every phase of nuclear energy development from ore-processing to finished products. Relationship of various research and production activities is shown in this flow-chart published by Blaw-Knox.

KENTUCKY not only boasts this key AEC plant at Paducah, but is strategically located with respect to the Oak Ridge installations and the new AEC facilities just across the river in Ohio. Auxiliary and production buildings are in background.

by ORINS is a series of classes in techniques of utilizing radioisotopes. This month the forty-eighth such course will get underway at Oak Ridge.

Scientists from throughout the world have journeyed to Oak Ridge to take the ORINS courses and Ralph T. Overman, chairman of the special training division, is now on temporary duty in Egypt where he is serving as advisor to the Egyptian Atomic Energy Commission.

One of the most valuable phases of the atomic energy program as far as the South is concerned is the application of nuclear technology to agricultural advancement. This was evident from the symposium on "Atomic Energy in Agriculture" sponsored by ORINS in Atlanta during the latter part of December.

Previously ORINS had collaborated with ORNL in a regional conference on the role of atomic energy in agricultural research held at Oak Ridge. This work is under the guidance of Dr. C. L. Comar, Chief of Biomedical Research.

The South gained still further prestige in the nuclear field recently when the newly-organized American Nuclear Society established its permanent office at Oak Ridge. Dr. W. W. Griforieff, an official of ORINS, was elected first permanent executive secretary and will make his headquarters in the ORINS administration building.

That nuclear science is becoming a field of study for a variety of technical men throughout the region is further indicated by the selection of several southern experts to serve on the AEC's 12-man advisory committee to consult on regulations concerning health and safety aspects of private atomic energy activities. This includes Donald P. Roberts, chief of the Industrial Hygiene Section of the Tennessee Department of Health, Nashville; and William T. Linton, Executive Director of the South Carolina Water Pollution Authority, Columbia.

Several dozen southern universities and research institutions are participating in the AEC program through research grants and contracts. For example, Duke University recently received a contract amounting to $98,753 for study of fast neutron cross-sections. The University of Tennessee recently announced a $20,000 contract for improvement of the ion-exchange process.

The Southern Governors in recent months have also grasped the possibilities of atomic development in the South

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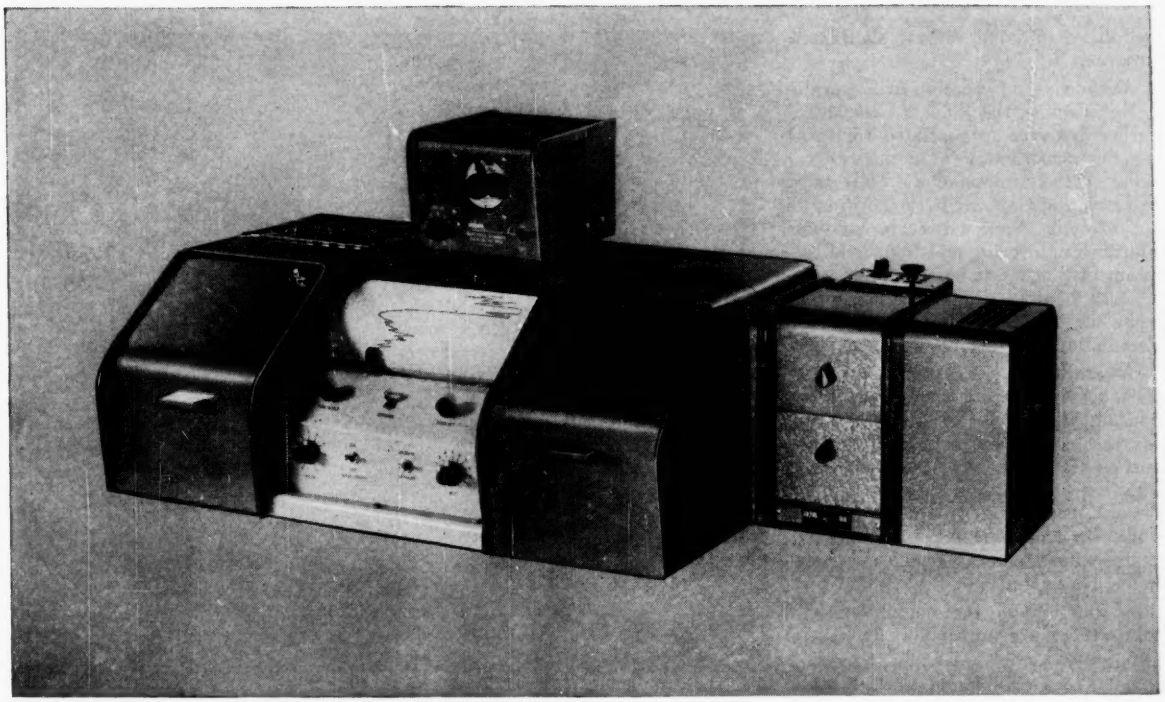

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- It uses preprinted, interchangeable charts which are quickly and reproducibly aligned with the wavelength scale.

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and have initiated several significant programs.

At the recommendation of Governor LeRoy Collins, the Florida Legislature earlier this year appropriated $500,000 for the construction of a nuclear reactor on the campus of the University of Florida at Gainesville. According to Dr. Joseph Weil, director of the Florida Engineering and Industrial Experiment Station, it is hoped to obtain an additional $2 million for the project from the AEC, the National Science Foundation and private industry.

Governor Shivers of Texas has also been busy promoting nuclear exploration and the Texas Legislative Council has just released a comprehensive report on "Implications of Atomic Energy for Texas." Authored by A. W. Worthy, acting executive director, the study was conducted under the auspices of five state senators and ten members of the Texas House of Representatives.

In announcing the committee appointments Governor Shivers declared:

"Since we are now well into the atomic age, Texas should officially take steps to see that our citizens receive the full benefits of the bounty made available to mankind through the controlled release of atomic energy. This advisory committee is the first step in that direction."

More recently, at Point Clear, Alabama, the Southern Governors discussed atomic energy briefly during a session on industrial development in the region. Governor Collins further indicated his interest by leading the nuclear discussion.

Collins cautioned that, "Left to chance nuclear energy for industrial use will gravitate to the existing industrial areas, mostly in the North. The South already short of industry is likely to be left still further behind unless we do something about it."

But if the South acts promptly Collins asserts, "Nuclear energy can mean the economic mainspring of the region. The challenge to the South is to make industry follow the atom and not stand idle and permit the atom to follow existing industry."

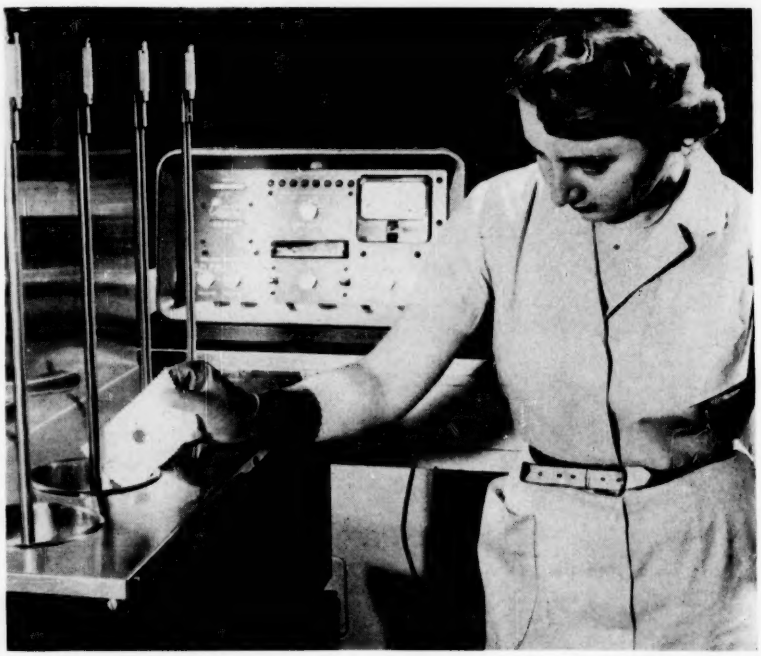
Collins continued, "If we are to bring the atom to the South, it will take immediate joint planning and action among the southern states on a regional basis, and on a bold and progressive scale beyond anything yet attempted."

Following a brief discussion in the closing minutes of the conference, Collins proposed that a committee of the Southern Governors look into a regional approach to industrial development through nuclear energy. As the first step the Governors called upon the Southern Regional Education Board to plan an exploratory conference.

The role of the SREB in the atomic field has not yet been defined. Since ORINS has been active in promoting nuclear research and education in the South for many years, the SREB will presumably concern itself with matters not covered in the well-established ORINS program.

Moreover, it is assumed that SREB will not duplicate the work of the Southern Association of Science and Industry in the applied or industrial field. SASI first advocated the nuclear energy emphasis in a 10-point program submitted to the Southern Governors at Hot Springs, Virginia, in 1953.

Certainly, the bright opportunities for the South in the atomic field will provide ample challenge for all groups.



RADIOISOTOPES are in wide use in southern industry. Typical application (above) is in checking action of detergents on cotton fabrics.

INFLUENTIAL members of the Southern Governors' Conference are (left) Tennessee's Frank Clements and Florida's LeRoy Collins. Clements is the newly elected chairman of the Conference while Collins is spearheading a nuclear energy study project.

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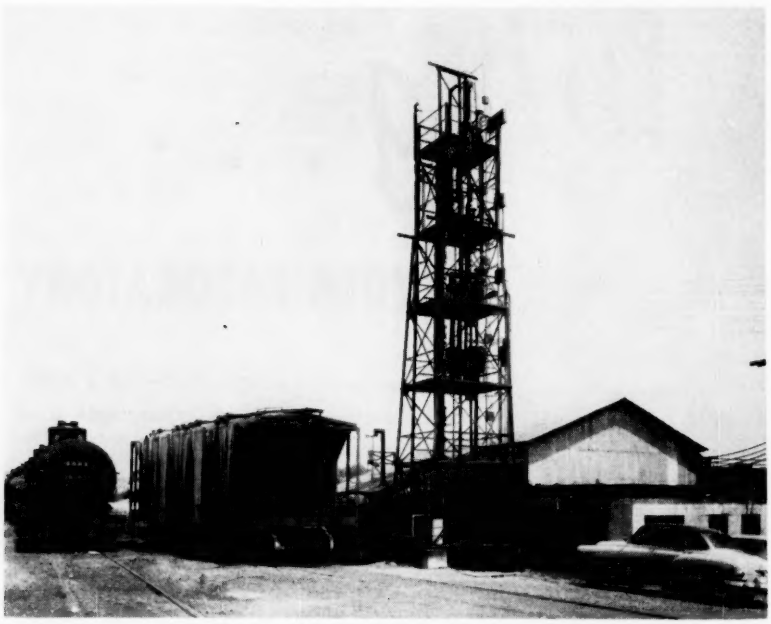

ONE OF Carl McFarlin's pet projects is this pilot plant set up for Tennessee Products and Chemicals by Vanderbilt University. Several products of commercial significance have already been reported.

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McFarlin moved from a mining course at Auburn to the presidency of the multi-million dollar Tennessee Products and Chemical Corporation here. And in so doing he has demonstrated the effectiveness of combining technical know-how with business acumen.

For both McFarlin and the South, it's a combination that can't be beat.

Carl McFarlin was born in Birmingham April 25, 1895. Birmingham, too, had been the birthplace of his parents, Will and Nannie Elinor Tinsley McFarlin, both of Irish descent. The "Irish" in McFarlin is readily detected in his quick wit and his smiling good humor.

Will McFarlin was one of the early contractors of the Birmingham district. He built mining camps, coal tipples, washers and preparation plants for various mining companies.

It's not surprising, then, to find the younger McFarlin early plotting his course over a similar ground as he worked, during summer vacations and at odd times, on the jobs on which his father was engaged.

The early activity was later to be of immeasurable benefit to McFarlin in his business life. Between the two McFarlins there existed an older brother-younger brother comradeship rather than that of father-son, for Carl's father was but 20 years older than he.

Carl attended the public grammar schools of Birmingham, then entered the Academy of Howard College in that city. After three years there he enrolled at Auburn, specializing in mining engineering.

One of his most vivid recollections of his Auburn day is of Dr. J. H. Drake, the beloved college physician of those days for whom the present day Drake Infirmary on the campus is named.

The old doctor was quite a character. A constant pipe smoker, he kept tobacco in his coat pockets together with a loose collection of pills. To the ailing student he would offer advice and, reaching into his pocket, pull out a handfull of pills, blow off the loose tobacco, and see to it that the student took them.

After College Days

World War I found McFarlin superintendent of construction for the Warrior Timber and Construction Company and took him overseas with the Engineers of the 31st division.

Home again, and honorably discharged in January, 1919, he became successively a mine foreman and superintendent of mines. After a two year interlude in the contracting business he became general superintendent for the Black Diamond Coal Mining Company.

That was in 1923. The following six years was a period of rapid expansion for the Black Diamond. It acquired its Blue Creek Division properties, with mines in the Bessemer district near Johns, and the Sequatochie Valley operations in the Chattanooga district at Whitwell, Tennessee.

At both places modern cleaning and preparation plants were built, provided with the most efficient machinery-jigs, flotation tables, and other of the latest types of coal preparation devices. All of this activity was under the direction of Carl McFarlin.

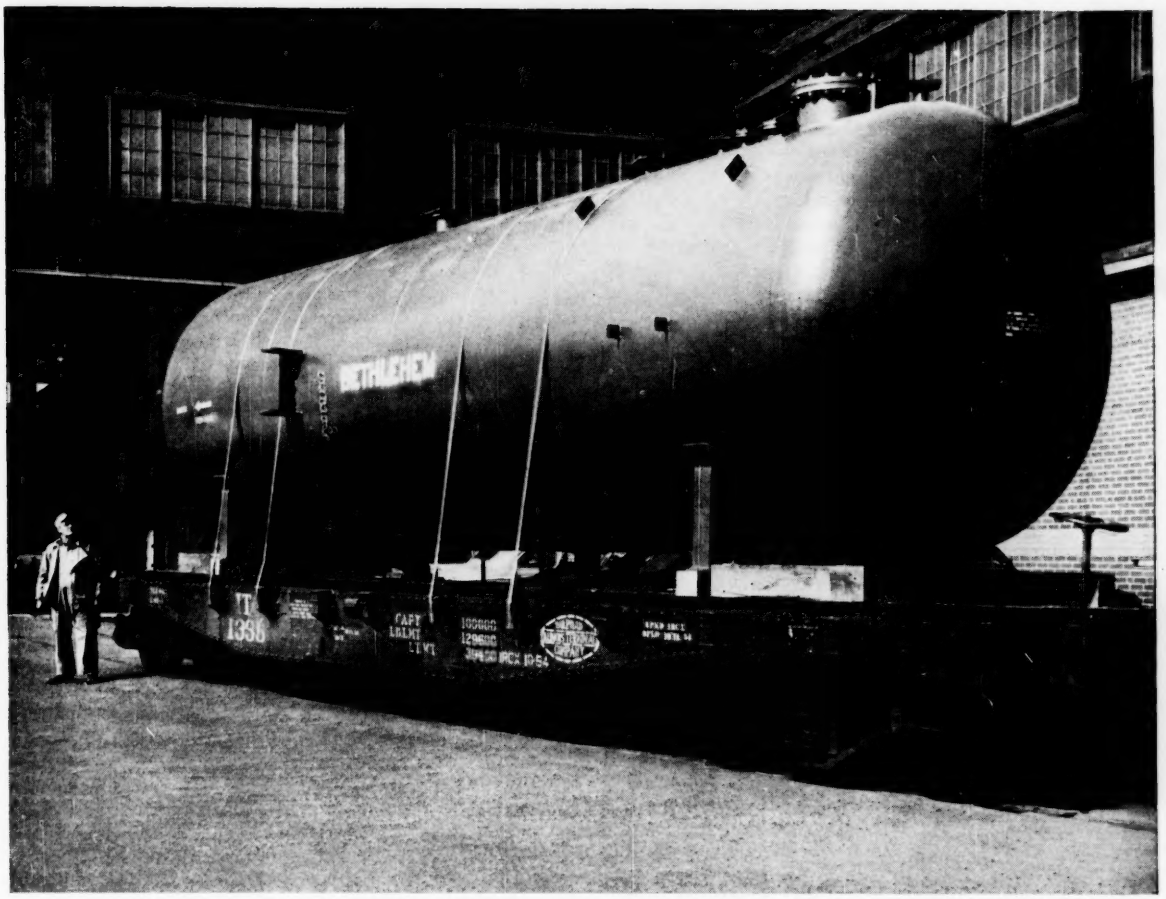
Among his associates a matter for frequent comment is McFarlin's genius with machinery and mine equipment. It is said that he can make safe and smoothly operating equipment out of what, to most men, would appear junk ready for the scrap pile. And he is equally effective with men and organizations.

Given a crew of men, for example, disorganized and ineffectively trying to raise a track crane and drag-line from a 30-foot river bottom whence it has fallen, he soon will have them cheered and encouraged and, with a set of simple chainblocks, raise the machine without a mishap.

The Turning Point

During the mid-thirties, McFarlin formed the Whitwell Smokeless Fuel Company. That year, 1936, was the turning point in his career.

He operated the Whitwell mines at Whitwell, Tennessee, until 1938, when that company was acquired by the Tennessee Products Corporation. So well had he operated the Whitwell Company that the new purchasers persuaded him to accept the position of vice president and general manager of Tennessee Products Corporation, and in 1939 McFarlin was elected to the presidency.



First of 56 vessels for Tide Water's Flying-A-Refinery in Delaware

It's big news when an oil company builds a $100,000,000-plus refinery from scratch. Tide Water Associated Oil Company is doing just that, 15 miles south of Wilmington, Del. Strategically located on the Delaware River about 50 miles downstream from Philadelphia, the new 130,000-bpd refinery will include an Orthoflow cat cracker, a fluid coker, a hydrodesulfurization unit and a sulfur recovery plant. It is expected that the refinery will begin operations late in 1956.

C. F. Braun, Inc. of Alhambra, Calif., design engineers for the entire project, selected Bethlehem to fabricate many of the vessels and tanks. The first to be completed was this 20-ton debutanizer accumulator, shown being shipped from our weldment shop in Bethlehem, Pa., late last October. Right on schedule, too.

The fifty-odd Bethlehem-built vessels include a wide range, varying in complexity from simple propane tanks to a 40-tray depropanizer. Smallest are some mixer tanks weighing only a ton or so, while other vessels tip the scales at over 100 tons, and measure well in excess of 100 ft. Diameters range from 24 in. to nearly 12 ft ID.

It takes the right equipment and the right men — experienced, well-trained men — to fill an order like this one. That's why Bethlehem got the job. And that's why, through the years, we have been chosen to fabricate many a tank and tower for chemical and petroleum processing.

We will be happy to quote on your requirements for welded tanks and vessels. Kindly call or write the nearest Bethlehem sales office for further information.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

BETHLEHEM STEEL

BETHLEHEM STEEL

The corporation had but recently emerged from years of financial stringency with a debt of one and one-half million dollars. Its plants and properties showed the effects. In addition to coal mines, the properties included blast furnaces, by-product coke ovens, plants for the manufacture of rock wool insulation and chemicals.

Although his experience had been principally in coal mining, he put his shoulder to the wheel and set out to learn the varied operations of the Corporation and put it on a paying basis. That done, McFarlin embarked on an era of modernization and expansion and, within the next ten years, had plowed back into the properties more than ten million dollars in improvements and expansions.

There have been added, under his regime, a ferro alloy plant, three new chemical plants at Chattanooga, an additional battery of coke ovens, two blast furnaces at Rockwood, Tennessee, and interest has been acquired in plants and properties in Kansas, Arkansas, Texas, and Florida.

End of a Dream

In his coal mining days coal was mined at Whitwell principally by hand and lowered from the drift-mine level to railroad level in monitor cars.

McFarlin dreamed for more than 12 years of a mechanized mine at Whitwell. He dreamed of lowering the coal to railroad level by conveyor and, being something more than a dreamer, proceeded to make his dreams a reality.

In 1945 he opened a new mine embodying his ideas and today it is recognized over the nation as one of the most modern installations for coal mining and handling.

Under his leadership Tennessee Products and Chemical Corporation's commerce has grown worldwide. While McFarlin's ability as an operator is widely known, his flair for salesmanship is also well recognized. He has increased the sales of his corporation from two million to more than thirty million dollars a year. The variety of his products ranges from boll weevil insecticides to alloys for the steel industry.

Just a few months ago Tennessee Products became a part of the Merritt-Chapman and Scott Corporation headed by financier Louis Wolfson. In the new organization McFarlin is Executive Vice President in Charge of the Chemical, Paint and Metallurgical Division.

McFarlin now is president and director not only of Tennessee Products

TENNESSEE Products and Chemical president Carl McFarlin is now a key member of Louis Wolfson's widespread industrial organization.

but also of Devoe and Reynolds Company, Inc., in Louisville. He also has an influential voice in the other widespread operations of Merritt-Chapman and Scott, which include steel, shipbuilding, chemicals and other manufacturing fields.

Looking to the Future

Although he has definitely "arrived" as a business leader McFarlin is not resting on his laurels. Just recently he has had a hand in organizing a new pilot plant operation here in Nashville which is expected to pioneer a variety of new products and processes.

At McFarlin's instigation Tennessee Products is sponsoring a $250,000 research program in cooperation with Vanderbilt University. Key facility in the program is an organic process pilot plant located on the site of the TPCCO Mineral Wool and Perlite plants here. The project is the result of more than 11 years of study conducted for Tennessee Products by Vanderbilt's Chemical Engineering Department headed by E. E. Litkenhous. Professor R. W. Dehoney is in charge of the operation.

That the program is paying off is evidenced in a recent announcement that Tennessee Products is offering for sale pilot plant quantities of benzonitrile. The new product is said to be adaptable for use in a wide range of chemical process and other industries, including plastics, rubber, organic synthesis, pharmaceutical, textile, leather, synthetic coatings and solvents.

It is obvious that Carl McFarlin has scored again for the Southern economic team.

Southern Invention Of 50 Years Ago Vital Device Today

KNOXVILLE. The metal bellows, a Southern invention that constituted one of the first steps toward automation in American industry, has just entered its second half century of service.

And it all sprung from the fertile mind of a Knoxville weatherman, Weston M. Fulton, who at the turn of the century was looking for a simple way to measure atmospheric pressure. A local plumber gave him the idea of applying his invention to the development of an automatic damper for steam boilers and a host of other uses followed in swift succession.

Today, bellows are found in office buildings, railroad cars, Diesel engines, the family auto, in newest jet aircraft and atom plants throughout the country. In heavy industry they control the flow of liquids at just the right temperatures. In contrast, they are found in greenhouses guarding the growth of delicate plants.

Made from many different metals, bellows are precision-made cylinders whose thin walls have been deeply pleated similar to those of an accordion or folding camera. Once the metal tubes have been corrugated and formed into bellows, they can be expanded and contracted within limits governed by the number of corrugations used. For various uses, bellows are made in diameters ranging from a fraction of an inch to 12" and larger.

In 1904, young Fulton established a plant in Knoxville to produce seamless metal bellows which he named "Sylphon" after the Norse Goddess of the Atmosphere. His firm, now the Fulton Sylphon Division of Robertshaw-Fulton Controls Company, is a thriving enterprise centered in a large plant that comprises 21 buildings, covering 400,000 square feet. Two thousand people are employed here, turning out hundreds of modern variations of the basic seamless metal bellows, as well as instruments and control devices employing the bellows principle. It is one of the largest plants of its kind in the world.

Design Problems Solved

The first metal bellows was a soldered brass affair. Undependable at best, the soldered seams would burst under any great stress. Young Fulton experimented with devices for drawing

tubes from flat stock, as a silversmith builds a cup or bowl from a flat sheet of sterling. Designing intricate dies, Fulton perfected a method of producing seamless metal bellows that were durable and inexpensive to manufacture.

More useful today than ever before, metal bellows are finding new important places in this jet and nuclear fission age. They are being used for oxygen regulators in high altitude aircraft. In these aircraft, bellows assure correct fuel and air mixtures by counteracting changing air pressures. As integral parts of many bombsights, metal bellows help bombardiers lay their explosives "on target."

Bellows assemblies, many fabricated from special steel alloys, are used in regulators and as the packless feature of valves at the Oak Ridge atom plants.

First designed as automatic damper regulators for household furnaces, they are now used to make home appliances more automatic, easier to build, and easier to operate; and they've given added safety and efficiency to hundreds of types of machines, buildings and carriers.

At the Knoxville plant, metal bellows are turned out in a smooth and uninterrupted flow from metal stock that is received in strips or coils of specified psysical characteristics. In one automatic operation, circles of metal are punched out and formed into deep cups. The cup then goes through a series of drawing and annealing operations, establishing the diameter and wall thickness of the tube. The tube is then trimmed to correct size.

Most bellows under 4⅜ inches outside diameter are formed hydraulically; larger units are formed mechanically with roll dies. To produce the former, the tube is placed in a hydraulic machine and pressure is applied inside the tube, forcing it to take the shape of the corrugated die. The inside diameter of the hydraulically formed bellows is substantially the same as that of the tube and, consequently, "cold-work" is imparted chiefly to the outer bends.

The other process used to make bellows, consists of forming a number of broad corrugations in the tube wall and successively deepening and narrowing these broad corrugations with suitable rolls. The diameter of the tube used in making the rolled bellows is less than the outside and greater than the inside diameter of the finished bellows. "Cold-work" is, therefore, imparted to both inner and outer bends, resulting in bellows that have elastic characteristics especially suited for many applications.

METAL BELLOWS of various sizes are shown to young Fenton Gentry, Jr., direct descendant of inventor Weston M. Fulton by J. V. Giesler, executive vice president of Robertshaw-Fulton Controls Company. Fulton's daughter, Mrs. Fenton A. Gentry, looks on.

Tennessee Industries Training Executives

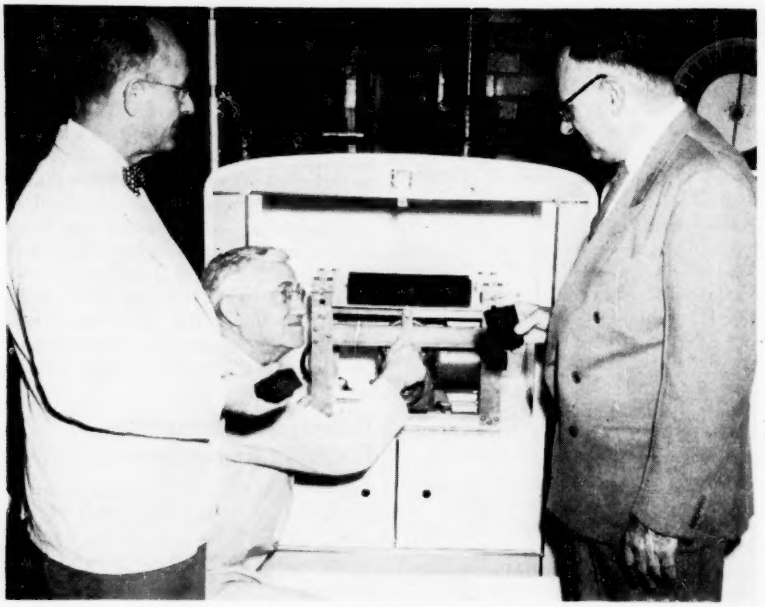
KNOXVILLE. Tennessee industry has a better record than that of the nation as a whole in guarding against "growing old at the top," according to a survey of 91 large and small industrial plants throughout the state.

Though income from manufacturing is greater than from any other source in Tennessee, the study is the first ever made of efforts by this state's industry to produce new executives within its ranks. A University of Tennessee graduate student, T. F. Wagner, conducted the research under the supervision of Prof. A. H. Keally, head of the U-T industrial management department.

Noting that the leaders of every major industrial group in the country have warned of the growing shortage of executive talent, Wagner said there is general agreement among them that the answer lies in "developing your own."

Over one-third of the Tennessee industries surveyed are meeting this need with formal management development programs in their plants, Wagner reported. On an industry basis, from furniture to textile, the participation by Tennessee plants in this education and training is greater than that shown in a recent nation-wide survey by the American Management Association, he said.

There is also an indication that Tennessee industries are doing more with their programs than are industries in general, he added. In addition to those that have formal programs, practically every plant surveyed is undertaking some form of education for the future, he said.



CHECKING a fatigue tester used in pavement research are (left to right) University of Kentucky officials Leo M. Chamberlain and D. V. Terrell. Looking on is Carl R. Shaffer, president of Xylos Rubber Company, a subsidiary of Firestone Tire and Rubber Company.

KENTUCKY RESEARCH FOUNDATION PROBES RUBBER HIGHWAYS, AIRCRAFT, ELECTRONICS

LEXINGTON, KENTUCKY. The University of Kentucky is actively contributing to the industrial development of the South through a research program covering virtually all fields of industrial science and engineering.

The program here is administered by the Kentucky Research Foundation which works in close cooperation with the College of Engineering and the College of Arts and Sciences. Projects are conducted under the sponsorship of a variety of government agencies and industrial firms.

One of the most recent grants was a $28,705 research contract awarded U.K.'s Department of Physics by the Division of Research of the Atomic Energy Commission. The grant is for a project concerned with nuclear physics.

The University's Van de Graaff Accelerator, more popularly known as the "atom smasher" and the neutron generator will be used in the research. A new equipment unit which will play a prominent role in the project will be a 20-channel differential pulse-height analyzer.

One of the largest single grants ever received by the University was awarded by the Air Force to the Aeronautical Research Laboratory less than one year ago. Extension of a research contract already held by the laboratory resulted in a $100,000 project. This grant called for experimental work for one year in the design and construction of compartmented airplane fuel tanks.

Another Air Force contract awarded recently was in the form of a $20,000 extension to the Department of Mining and Metallurgical Engineering for research on the metal titanium and its alloys. This contract extension came from the Wright Air Development Center of the Wright-Patterson Air Force Base, Ohio, making a total of $126,409 which has been appropriated by the Air Force for two separate projects on titanium by this department.

Naval Ordnance Study

Among other current studies in the College of Engineering is a $30,000 research and development project which was completed recently by the Department of Electrical Engineering for the U. S. Navy. Electrical equipment designed, constructed, assembled and tested on the U.K. campus has been moved to the U. S. Naval Ordnance Research Laboratory at White Oak, Maryland.

Several research projects are underway in the Highway Laboratory, and among the most interesting is one in which the laboratory is cooperating with the Firestone Tire and Rubber Company in an effort to make bituminous pavements last longer by adding rubber.

Dr. M. M. White, dean of the College of Arts and Sciences, also is working closely with the Kentucky Research Foundation in expanding the research programs of his various departments.

Signal Corps Program

Last year the Department of Chemistry was awarded a research contract by the U. S. Army Signal Corps for the ninth consecutive year, with the contract bringing the full total of the grants to more than $125,000.

Serving as president of the Kentucky Research Foundation is Dr. Leo M. Chamberlain, vice president of the University. As a result of the general expansion of U.K.'s research program, the foundation named a director more than a year ago to coordinate all research administered by this organization. This director is Dr. Merl Baker, a member of the University's engineering faculty.

Overall activities of the foundation include the management and promotion of research contracts, management of certain funds assigned to scholarships and fellowships, and the formulation of certain administrative policies. The foundation was established in 1945.

Approximately 1,100 of U.K.'s 6,000 students are enrolled in the College of Engineering. This division is headed by Dean Daniel V. Terrell, immediate past president of the American Society of Civil Engineers. Dean Terrell also serves as director of the school's Engineering Experiment Station.

Five different departments operate as units in the College of Engineering. They are the departments of civil engineering, electrical engineering, mechanical engineering, mining and metallurgical engineering and general engineering.

Included in the engineering college's physical plant are the mining, aeronautical, highway, and coal research laboratories. These laboratories function under the supervision of the various department heads.

The Jet-Propelled Peninsula

NEWPORT NEWS, VA. "Tomorrow's South Today" might be an apt phrase for the Lower Virginia Peninsula.

For this booming section—scene of the first English settlement in the country—still is a frontier. But today it is a frontier for scientists, engineers, and expansion-minded industrialists.

And the talk here now is not of John Smith, or Lord

(Below: Experimental Jet In NACA Wind Tunnel)

$201,114,000

RETAIL SALES - 1954*

SALES ARE SOARING in Newport News-Hampton-Warwick, Virginia's three-in-one metropolitan market. Population, sales and income are at an all-time peak, and still growing fast. Sell this major Southern market through the Daily Press and Times-Herald, the medium that reaches everybody every day.

*U.S. Census Bureau, 1954 Census of Business, Preliminary Report

Daily Press ☆ Times-Herald

COMPLETE EXCLUSIVE COVERAGE OF

Newport News - Hampton - Warwick, Va.

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NEWPORT NEWS, VIRGINIA

Cornwallis. It's jet fighters and guided missiles, nuclear reactors for ship propulsion, and a host of other science-industry developments.

To a degree that is still most unusual in the South, the Lower Virginia Peninsula is diversifying its industrial economy. And, with an impressive list of plant location attractions, it is arousing the interest of the business world.

Latest evidence of the appeal of this section is seen in the decision of American Oil Company to locate its $30 million refinery on a 1,100 acre site near Yorktown. The selection was made only after location specialists surveyed some 40 other possible sites along the length of the East Coast.

And, significantly, the final decision was made by American's president, Donald J. Smith, who during his 40 years in the oil industry has handled projects from Casper, Wyoming, and Texas City to Aruba, Netherlands West Indies.

"We are convinced that this Yorktown site is the best for our company's future operations," Smith says. "It fans out to our marketing territory from Maryland to Florida," he said, adding, "we expect to complete construction toward the end of 1956 and have it in full operation early in 1957."

"And as further emphasis," Smith states, "we plan to expand our refinery capacity at Yorktown in accordance with future needs."

In a recent progress report Smith said that he expected seven contracts for the project to be let by the beginning of 1956. In addition to the huge refining unit which will tower nearly 15 stories above the ground, the plant will include a laboratory and operations building, chemical storage facilities, and several important auxiliary units.

One contractor has already passed the halfway mark in construction of a $1.75 million pier into the York River to accommodate a 700 foot super tanker, a 550 foot tanker and two barges ranging from 150 to 200 feet in length. Smith also reported that Chicago Bridge and Iron Company is making rapid progress on construction of 63 steel tanks of various sizes having a total capacity of more than 158 million gallons.

When the Yorktown Refinery goes on stream in 1957 it will employ a total of 325 workers and will have an annual payroll of more than $1.75 million. Capacity will be 1.1 million gallons of gasoline daily.

The major contractor for the unit is the M. W. Kellogg Company and the contractor for the coke unit is Lummus Company. Local contractors include Wiley Jackson Company and Tidewater Construction Company.

KEY EXECUTIVES responsible for the location of American Oil's new refinery at Yorktown are (left to right): S. B. Schapiro, manager of engineering, construction and maintenance; Donald J. Smith, president; L. W. Moore, executive vice president, and Harold R. Snow, vice president in charge of manufacturing.

American already operates asphalt refineries at Baltimore and Savannah. There are 14 division offices scattered along the East Coast from Portland, Maine, to Port Everglades, Florida.

Success Breeds Success

Even though construction was begun only recently on the American Refinery, it has already attracted substantial investments to the Lower Virginia Peninsula, and it is certain that additional projects will result from the unit. The more important "satellite" plant influenced to date is the $20 million steam electric generating plant which will be built adjacent to the refinery site by Virginia Electric and Power Company.

This is a happy arrangement wherein VEPCO will buy coke from American and in return will sell American electric energy. American's coke plant will have a capacity of more than 500 tons per day.

VEPCO's plant will be located on a 120-acre site obtained from American. It will, of course, supply energy not only to the refinery but to the entire peninsula area.

Still another new facility to provide energy for the booming peninsula area is the new terminal located at Newport News by ESSO Standard Oil. This terminal costing more than $1.5 million will have a storage capacity of 22 million gallons.

Situated at the foot of Warwick Avenue in Newport News on the James River, the terminal occupies a 17-acre tract leased from the Chesapeake and Ohio Railway. It was dedicated only a few months ago.

The ESSO facility includes more than 5 miles of pipelines which are constantly filled with more than 100,000 gallons of products. The terminal can bunker two ships simultaneously while loading a variety of tank trucks, railway tank cars, and transports.

The fuel oil installation was deliberately located adjacent to a coal-loading pier operated by Chesapeake and Ohio so that vessels can take on cargoes of coal while receiving fuel oil.

This unusual arrangement—a first—results in a turn around savings of at least four hours for each ship and in some cases as much as a full day.

The mainstay of the Peninsula economy has always been shipbuilding and allied marine industry. Employment in

Feature City Series

This is another in a series of special reports on Southern cities and metropolitan areas which enjoy unusual industrial growth possibilities. The series was begun in INDUSTRIAL SOUTH and will be continued in the RECORD. Reprints of this section are available from the Peninsula Industrial Committee, Box 92, Newport News, Va.

shipbuilding has fluctuated from peacetime levels of 10,000 to wartime levels of more than 31,000.

Key unit is the Newport News Shipbuilding and Drydock Company established in 1886. Today it is one of the greatest shipbuilding companies in the world with an employment of nearly 14,000.

The company has earned an enviable reputation in the construction of some of the Navy's top vessels including the super carrier Forrestal and the newest and biggest passenger vessels, such as the U. S. S. United States. Current backlog amounts to more than $150 million.

Newport News Shipbuilding has always invested heavily in research and development activities. It is said to be the only yard, for example, which maintains a model basin for testing hull designs.

More recently the company has established an Atomic Energy Division and is heavily engaged in reactor and ship propulsion development work. Besides its shipbuilding activities the firm also manufactures heavy machinery for the hydraulic, paper, textile, transportation and other industries.

Accessibility to Chesapeake Bay and the Atlantic also accounts for an important seafood industry based on the Peninsula. Important products include oysters, crabmeat, and fish. 1954 seafood production exceeded $10 million.

Importance of the Virginia seafood industry is indicated by the fact that the state has established a well-equipped marine research laboratory just across the York River at Gloucester Point. This unit, the Virginia Fisheries Laboratory, has as its objective the improvement of conditions in the fishing industry.

Diversified agricultural activities also are an important part of the Peninsula business scene. In order of importance, these include dairy products, poultry, truck farming, pigs, and nuts and fruits. Total income from these sources in the Peninsula area exceeds $1 million annually.

But the big story in Peninsula development lies in the large number of new and expanding diversified manufacturing activities. A rundown of just a few of these developments indicates that progress on the Peninsula is occurring on a wide economic front:

Dow Chemical has purchased a 600-acre tract on the James River about nine miles southeast of Williamsburg. While plans have not been announced it is expected that this will be the location of a major plastics plant.

Plymouth Cordage Company, a Massachusetts firm, has in recent months located a carpet twine manufacturing plant in Warwick. It is expected to employ 100 to 125 workers.

Also in the textile field is the Tidewater Garment Company which employs about 140 workers in Newport News. This operation was located here by the Walter Goodman Company from New York.

The Century Ribbon Mills, another New York firm, operates a plant here which keeps one hundred employees busy on a three-shift basis. Cutput exceeds 1,000 miles of ribbon and tape weekly.

And a few months ago a Florida corporation, National Newport News Company, announced plans to locate a linen service plant which will employ about one hundred workers. A $175,000 plant is being built.

Among other varied industries is the Southern Colorprint Corporation which prints comic sections for 18 newspapers

scattered throughout the South. According to superintendent, D. H. Lawson, "We are the only organization doing this type of work between Pennsylvania and Texas."

A leader in the electronics field is Maida Development Company located in Hampton. This firm employs 150 people in the manufacture of small ceramic capacitors, most of which are sold to manufacturers of television sets.

Newport News Forms Company, Inc., manufacturers of business forms, is said to be the largest of its type in the Southeast. Some 207 employees produce more than $3 million per year worth of manifold books and paper products. Distribution is nationwide.

Another firm distributing over a large area is Hampton Paint Manufacturing Company with a capacity of 1,000 gallons per day. This company specializes in architectural paints for which government agencies are a large buyer.

Largest electroplating plant on the Lower Peninsula is Metal Finishing Company, founded less than 10 years ago. This firm serves a variety of fast-growing metal fabricating industries in the surrounding area.

Another Peninsula industry based on technical development is Hooper Valve and Engineering Corporation, headed by president Frank B. Hooper. It got its start when the firm developed a special valve for ships which prevents water coming in through waste discharge pipes. Today the company supplies valves for almost all East Coast shipyards and has customers as far away as Canada and Sweden.

Another local industry which reflects the ingenuity of the people of the area is Dolphin Molding Company, Inc. Headed by president James M. Stewart, a chemical engineer, the small firm has pioneered in the development of high speed molding equipment.

Still another company applying technical know-how to the needs of the Peninsula area is Hampton Roads Testing Laboratories in Newport News. One of the chief activities of the company is testing coal which is shipped through local ports. Samples are taken from each cargo to determine analysis since coal destined for gas production may have different characteristics from that scheduled for metallurgical plants or other uses.

Another local brainchild is Scott and Stone Structurals, Inc., located at Hampton. Organized by president C. T. Scott, a geophysicist, the firm employs about 40 people on defense installations such as electronics towers for the Navy and Army microwave antenna systems.

Chesapeake Bay Frosted Foods Corporation, now employing 60 to 80 workers, was developed here by B. R. Dawley and J. O. Saunders to supply the demands for frozen seafoods. Their company is said to lead the nation in the sale of breaded oysters.

NACA Influence

The merry-go-round of development so common today where research is applied is particularly evident in the Peninsula area. Few spots in the South can point to such a large number and variety of technical industries per unit of population.

One of the prime motivating forces is the Langley Laboratory of the National Advisory Committee for Aeronautics. Located adjacent to the Langley Air Force Base, the NACA installation has grown from one building in 1918 to one of the nation's outstanding laboratories having a present plant value of more than $112 million and annual payroll of more than $17 million.

Today NACA employs more than 3100 scientists and workers at Langley and is a vital cog in the nation's aircraft and missile development program. Most of the work, of course, is classified and cannot be reported.

But it is significant that a Langley research scientist, Richard T. Whitcomb, was presented the Collier trophy just a few weeks ago. And this trophy, given annually for the outstanding contribution to aeronautical progress, had previously been won by another Langley scientist, Dr. John Stack.

Certainly the presence of one of the nation's top research facilities on the Peninsula has had a far-reaching influence on the economy of the area. Aside from the direct value of huge investments and large payrolls, the NACA has contributed to the creation of a pronounced scientific atmosphere.

And this has led to the development of numerous industries by technical personnel who have left NACA to go into business for themselves.

An outstanding example is Hastings Instrument Company and its affiliate Raydist Navigation Company. Founded only a decade ago by Charles Hastings, NACA instrument specialist, the two firms today employ approximately 175 people. Payroll is about $13,000 per week—an average wage of $74 for 40 hours.

Hastings produces a variety of highly technical equipment such as velocity meters, manometers, vacuum gages, and electronic cells.

One of the best-known products is

PRIDE OF THE NATION—shown recently during construction at the Newport News Shipbuilding and Dry Dock Company are the liner United States and the super carrier Forrestal. Newport News has produced many of the country's most important vessels.

THE COMING CITY OF NEWPORT NEWS

(From MANUFACTURERS RECORD, June 17, 1882)

The work which is going on at Newport News at the present time is simply immense; no one has an idea of its magnitude who has not visited the place. Streets are being laid out and graded; large sewers as well as drain pipes are being laid, and buildings are rapidly going up. In every direction can be seen vast piles of lumber, brick and stone, while a hotel as large as the Atlantic in this city has already been erected. On the water front the pier on which is built the general freight depot runs out into the river six hundred feet while a double track extends its entire length. On either side vessels can load and discharge their cargoes, as many as twenty or thirty at a time. The coal pier, which extends about seven hundred feet from the shore, and which has an elevation of about sixty feet above the river, is rapidly approaching completion. Already long trains of cars, loaded with coal are on the side tracks, waiting for the completion of the chutes on the pier in order to discharge their burden. Between the freight and coal piers the foundation for an extensive grain elevator is now being prepared by the driving down of a vast number of spiles, and in a short time it will begin to tower above the surrounding piers and buildings.

Steamers At Newport News

(From MANUFACTURERS RECORD, June 10, 1882)

The first steamship of a line between New York and Rio de Janeiro was expected at Newport News yesterday to take on eight hundred tons of coal and twelve thousand barrels of flour. The British steamship Maresca, Captain Moen, from Beaufort, S. C., to England, is at Newport News to be supplied with coal. She is the first trans-Atlantic steamer to put in there for coal, and is consigned to Messrs. William Lamb & Co.—Norfolk Virginian, June 6.

TYPICAL OF A NUMBER of fast-growing technical enterprises spawned in the Peninsula area is Hastings Instrument Company. Checking expansion plans are Mrs. Mary Hastings, wife of the president, and Al Budde, a company executive.

Raydist, a high precision electronic navigation tracking and positioning system. Most of the key personnel are "graduates" of NACA.

Another firm spawned in the NACA laboratory is Charles A. Hulcher Company of which Charles A. Hulcher is president. Formerly employed in the NACA photographic laboratory Hulcher now manufactures rapid sequence cameras for nationwide distribution.

Another company, Modern Machine and Tool Company, Inc., in Warwick, was organized by R. J. Effinger, another NACA employee. Among its varied products are an automatic weighing machine for American Tobacco Company, a soft-spot checker for Philip Morris, and a number of confidential projects for government agencies.

And the Newport News shipyard has spawned its share of local industries. An outstanding example is Brown and Grist, Inc., a million dollar concern founded by two workers laid off at the yard at the close of World War II.

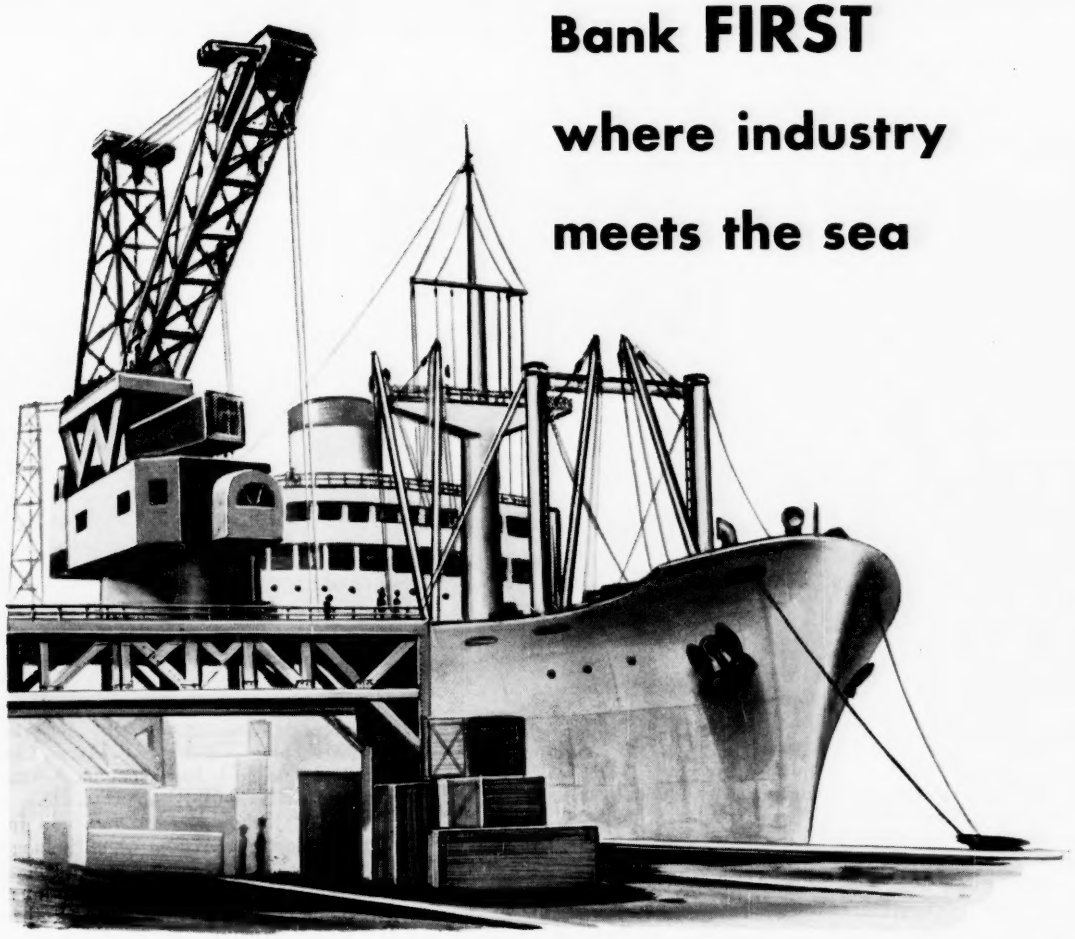
The firm's subsidiary, the Technical Service Corporation, has contracts with the government, and the Wright and Pratt & Whitney aviation firms for aeronautical devices and parts. For the National Advisory Committee for Aeronautics, TSC manufactures fuselages for super-secret free-flight missiles which NACA will describe only as "aerodynamic shapes"—the aircraft of the future.

Brown recalls that he and Grist decided to "do something for ourselves" when the shipyard layoff occurred at the close of World War II. Their equipment consisted of a drill press, saw, and torch. And something else—ambition and a large measure of that inventive genius which has become popularly known as American "know-how."

"We decided there was considerable room for improvement in window design," Brown says. "The result was that Arthur Grist developed an awning-type window on which the firm now holds a patent. The window has balanced vents which may be opened and closed by a single control and secured with a single lock.

"As important to our development was the creation of aluminum window frames and wall panels. We found a ready market for our products which expanded with surprising swiftness. The first year of our operation, we grossed $8,000. Our business now exceeds $1,000,000 and from a two-man operation we've expanded into one which employs more than 100 people and has sales representatives throughout the nation, plus three exporters."

In addition to their company duties, both Brown and Grist find time to relate to visitors and acquaintances the advantages which industry can find by



Bank FIRST where industry meets the sea

Industry is growing fast on the Virginia Peninsula . . . an area served by one of the world's finest natural harbors.

Throughout the years the FIRST National Bank of Newport News has played a leading role in the industrial development of this community . . . serving industry, business and commerce with friendly, experienced counsel. Whatever your banking needs—national or international—the Virgimia Peninsula's largest bank is ready to serve you. We invite you to make use of our facilities.

THE FIRST NATIONAL BANK

Newport News, Virginia • Established 1891

ASSETS EXCEED $40,000,000.00

Member Federal Deposit Insurance Corporation
Member Federal Reserve System

locating on the Lower Virginia Peninsula.

"If credit for our success belongs to us, it also belongs to the peninsula," Grist declares. "Here, within a few miles of Newport News, Jamestown, Hampton, and Williamsburg, we enjoy plenty of both salt and fresh water, excellent truck and rail transportation, technical facilities of all description, and a stable, plentiful labor force whose skills are second to none. The Lower Virginia Peninsula provides a stimulating and rewarding home for anyone fortunate enough to recognize its advantages."

The popularity which Brown and Grist enjoy with builders may be explained partly by the fact that B & G's design and manufacturing process has succeeded in cutting construction costs as much as $4 a foot in some cases. Using heavy cores with the aluminum panels, savings still are as high as 25 per cent in many instances.

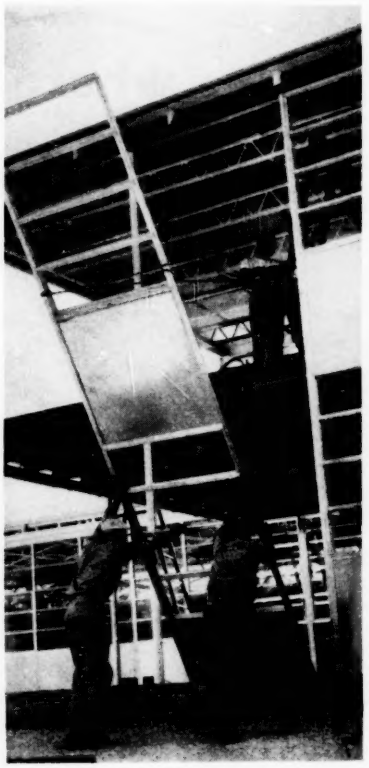
For this reason, the firm's windows and panels are being sold all over the nation. One satisfied customer—a Georgia parochial school—reported that a Brown & Grist truck arrived at 9:30 a.m. one Saturday. Ten working hours later, walls and windows were completely installed in the 16-room building.

A tour of the B & G's Technical Services operation is a glance into the future. Here, TSC employees have refined contour-cam-cutting techniques with a machine of their development. Copies of the machine are now being built by other firms under license from TSC.

Here, also are built the fuselages and nose and tail assemblies of strange missiles which soar from nearby Wallops Island at the rate of 3,000 miles an hour in NACA pilotless aircraft studies. When the missiles leave the TSC shop, they are complete but for the radio and electronic equipment installed by government scientists. From the devices, technicians collect data on wing lift, drag, dynamic stability, buffeting, flutter, aeroelasticity, heating, and ram-jet engine performance.

TSC also makes rotor blades for private aircraft companies. Most of the blades are of experimental design and are used in new jet engines under test conditions.

Perhaps the most graphic symbol of the Brown & Grist operations, however, is its new building, occupying 30,000 square feet of floor space. Window wall paneling is used throughout. But the structure will serve as more than a roof and walls for its owners. It will provide a new testing ground.



THE simplicity of their technique of construction with aluminum wall and window panels is demonstrated by Brown and Grist, Inc., in erecting their new building at Warwick.

The basic panels consist of a patterned sheet of aluminum outer skin with a sheetrock inner skin, sandwiching a core of insulating board. The pieces are forced together under pressure and then sealed with an alumulastic compound.

Also in use are panels with an outside skin of stainless steel. These were furnished by the Crucible Steel Co. Along with other panels, which have a "honeycomb" core and are faced with aluminum on both sides, they will be carefully watched for their resistance to exposure and deterioration. The building is expected to furnish the company with valuable data which will lead to still more improvements in future construction.

"Like nearly everybody in business and industry on the Lower Virginia Peninsula," Brown explains, "we want to keep looking ahead and moving ahead. We plan to do just that."

Plant Location Factors

From the number and variety of enterprises that have been situated on the Lower Virginia Peninsula and, as indicated by their success, it is apparent that the area enjoys a happy combination of plant location factors.

It is not accidental that approximately $4 million in new inndustrial payrolls have come to the Peninsula every year for the past 9 years.

Transportation probably ranks as the number one factor influencing the location of industry in the section and the important trump cards are the waterways which literally surround the area.

The key attraction is the port of Newport News which is a part of the great harbor known as Hampton Roads. It is frequently termed the world's finest natural harbor.

And the port itself is augmented with many miles of shoreline, developed water frontage, and bays, rivers, sounds, and canals. The latter serve as feeders to the primary port facilities.

This great water terminal provides access not only to international markets but it is a hub of shipping to eastern ports through Chesapeake Bay. Moreover, there is a 25 foot channel inland to Richmond along the James River. And the York River on the North is also navigable for some distance.

And the port is but one unit in a transportation system which influences industrial patterns over a mult-state region. Newport News is the terminus of the Chesapeake and Ohio Railroad which funnels traffic into the area from Chicago, Detroit, Cincinnati, Columbus and other midwestern centers.

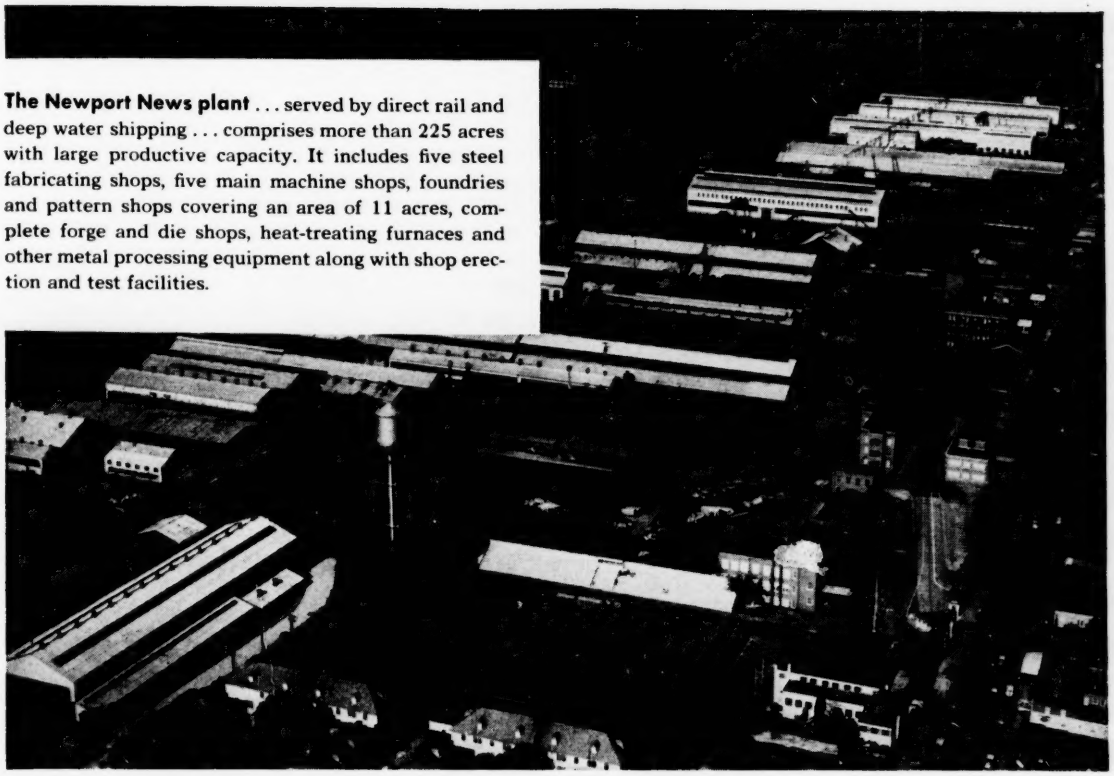
The Port of Newport News has a total of 44 piers with adjacent rail sidings and cargo sheds. In addition the Hiden Storage and Forwarding Company operates warehouse facilities at Newport News in 113 buildings with a total capacity of more than two million square feet.

Scores of steamship lines call at Newport News from practically every corner of the globe. And the Virginia State Ports Authority, along with other local development agencies, is conducting an aggressive campaign to expand export-import trade in the area.

Port facilities are being improved in a multi-million dollar expansion program. In addition to the ESSO Standard Oil bunkering station mentioned earlier, there has recently been added a 90 ton floating crane. The port also has two travelling cranes capable of lifting 30 ton loads individually or 57.5 tons when used together.

Construction began just a few months

The Newport News plant . . . served by direct rail and deep water shipping . . . comprises more than 225 acres with large productive capacity. It includes five steel fabricating shops, five main machine shops, foundries and pattern shops covering an area of 11 acres, complete forge and die shops, heat-treating furnaces and other metal processing equipment along with shop erection and test facilities.



Make Newport News your source for fabricated metal structures

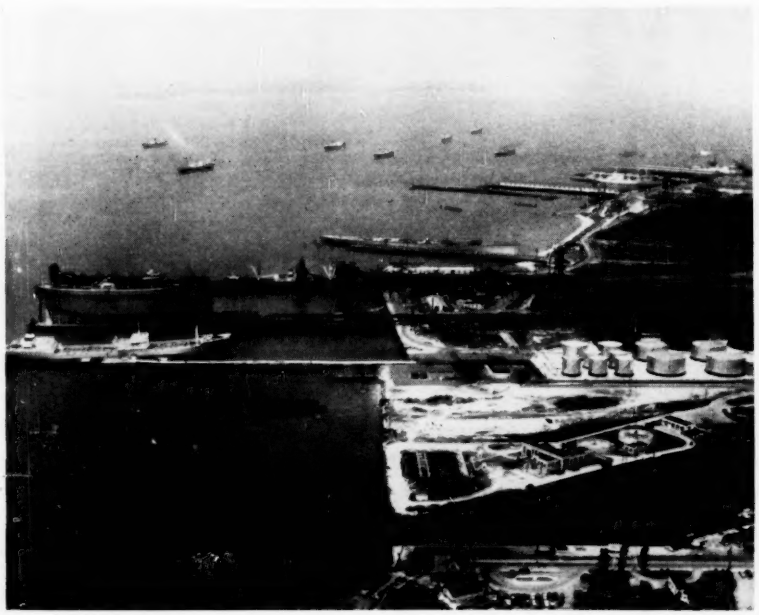
Let Newport News fabricate your weldments or sub-assemblies. Call on us for plate fabrication . . . from vacuum tanks to bridge caissons . . . for pumps, valves, pipe lines . . . you'll find that Newport News fabricates parts to answer most demands.

In the vast plant, shown above, Newport News craftsmen complete your orders with specialized production techniques, and with sound experience acquired through construction of thousands of products ranging from small components on rayon spinning machines, to the giant 165,000 hp hydraulic turbines at Grand Coulee.

See for yourself what Newport News is doing, and how this company's high integration of skill and production facilities can help you. Get the facts, shown in *Facilities and Products.* A copy of this illustrated booklet is yours for the asking . . . write for it now.

Newport News
Shipbuilding and Dry Dock Company
Newport News, Virginia

ago on an $8 million ore pier which is expected to be in operation next fall. Chesapeake and Ohio officials state that this new pier will be the largest and fastest bulk handling facility on the East Coast and will produce an added revenue of at least $4.6 million per year for the railroad.



ONE OF THE NEW facilities which is increasing the attractiveness of Newport News as a shipping center is the bunkering terminal added by ESSO adjacent to the C & O coaling facilities. Ships may now take on fuel oil and coal simultaneously, reducing time in port.

THIS VIEW at Old Point Comfort shows the artificial island (left center) dredged for the northern terminus of the new $70 million tunnel under Hampton Roads. The tunnel, together with bridges at either end, will supplant existing ferry service in 1957.

The top commodity in terms of volume moving through the port of Newport News is coal. In fact the port is said to be the leading coal shipping center in the World.

In previous decades large quantities of coal from the fields of Virginia and West Virginia moved through Newport News for shipment coastwise, principally to New England. But since World War II an increasing percentage has gone into the export market.

The close relationship between Peninsula industry and Peninsula shipping was brought out recently in a talk by Louis C. Purdey, Commissioner of the Peninsula Industrial Committee. Purdey, discussing the location of America's refinery in York County, estimated that it would require about 90 ships per year to deliver crude oil to the site. Moreover, the expected growth over a few years will lift this requirement to approximately one tanker a day or about 350 ships per year.

And Purdey cites estimates that a visit of a bulk carrier is worth about $25,000 to the port area. Thus, one refinery may be responsible for an annual business increase of $2.25 million to begin with and as much as $8.75 million within a few years.

Moreover, Purdey points out that the visit of a general cargo vessel provides even more income for the port visited. In the case of a 10,000 ton ship the value of a visit may be as much as $85,000 to $95,000.

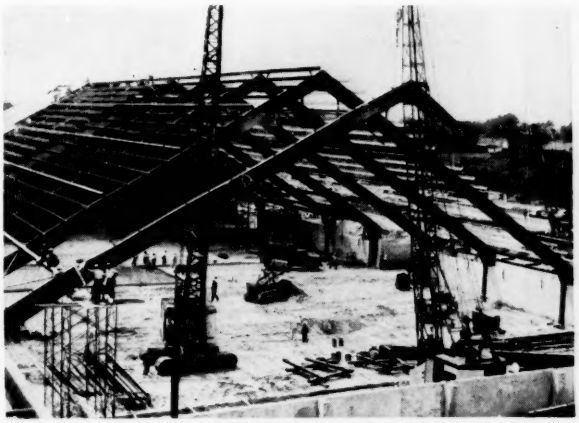
This means that the entire Newport News area is caught in a merry-go-round of industrial growth which behaves to some extent like a breeder reactor. Increase in shipping stimulates expansion of industry which in turn leads to further increase in shipping.

Other Transportation Services

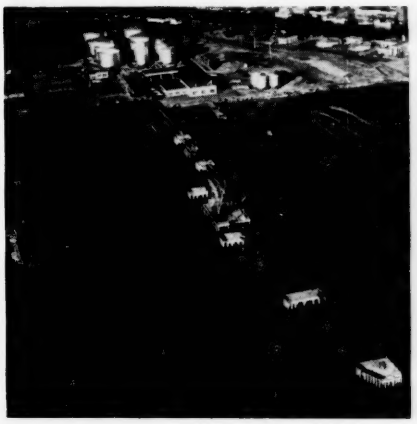
In addition to the important rail and water services, the Peninsula area enjoys an excellent surface system and an improving air transport service.

Virginia's 49,000 miles of primary and secondary highways constitute the third largest state maintained system in the country. From Newport News, there are 31 bus schedules daily, and there are 28 active motor transport lines.

At present access to the Norfolk area across Hampton Roads is limited to ferry service provided by the Virginia



Storage Warehouse, Allied Chemical and Dye Corporation, Hopewell, Va.



Oil Terminal, Esso Standard Oil Co., Newport News, Va.

Marine Facilities, American Oil Company, Yorktown, Va.

Ore Pier, Chesapeake and Ohio Railway Company, Newport News, Va.

With its well-rounded staff of trained engineers, TIDEWATER CONSTRUCTION CORPORATION is prepared to handle your problems of all types of Industrial Plant Construction as well as Heavy Construction.

Our experience includes Paper and Pulp Mills . . . Fertilizer, Gypsum and Chemical Plants . . . Boiler Plants . . . Petroleum, Ore and Coal Loading and Unloading Facilities . . . Piers . . . Bridges . . . Marine Railways . . . Dry-Docks . . . Bulkheads . . . Shipyards.

We are prepared to assist you in the location, to estimate costs and to build or expand your plant—we have company-owned marine and land equipment to insure meeting commitments promptly.

Efficient supervision will relieve you of worries over details, both of an engineering and construction nature, from the time the plant is conceived until it is placed in operation.

•

TIDEWATER CONSTRUCTION CORPORATION

ENGINEERS—GENERAL CONTRACTORS

NORFOLK, VIRGINIA

W. R. MOOZA is founder and director of Hampton Roads Testing Laboratories. One of the principal activities of his organization is checking coal cargoes shipped through the port of Newport News.

JOHN BENNETT, chief engineer of Maida Development Corporation, checks a capacitor part under the microscope. Maida is one of several fast growing electronic enterprises on the Peninsula.

Department of Highways at Newport News and at Old Point Comfort. But this situation will soon be remedied by means of a $80 million bridge tunnel which will run from Fort Monroe on the Peninsula through Fort Wool and terminating at Willoughby Spit on the Norfolk side.

Already two islands have been dredged to provide the tunnel entrance points and it is expected that the entire project will be completed sometime in 1957. The tunnel itself will be approximately 7,900 feet long and will be situated 58 feet below mean low water allowing a 40 foot ship channel over the tunnel with a covering of at least 10 feet of fill.

Airline service is also being expanded. The airport—named in honor of the Virginia patriot Patrick Henry—is new and modern and now offers 23 flights daily. Lines serving the Peninsula include Capital, Piedmont, and National.

Airport manager Eugene C. Marlin said recently that the passenger volume for 1955 would probably exceed 70,000. This would top the 1954 total by some 20,000 passengers.

Marketing Opportunities

Another major factor in the attraction of industry to the Peninsula is accessibilty to expanding markets. These include not only the local metropolitan area, but a regional market including several states and export markets.

Until recently the Peninsula was included in the Norfolk metropolitan area and its importance was often obscured. Now, however, the Lower Peninsula is regarded as a separate metropolitan area worthy of note on its own merits.

Dimentionally the Lower Peninsula or, as it is often called, the Tri-Cities Area, embraces something over 250 square miles. It is about 25 miles long and 10 miles wide.

Governmental units include the city of Hampton, population, 75,000; city of Warwick, population 60,000; the city of Newport News, population, 45,000; and York County, population 18,000. A small section of James City County also is included in the Peninsula in many studies.

This section constitutes the third largest metropolitan area in Virginia and is more densely populated than any of the others. The Peninsula averages 1,058 persons per square mile as contrasted with an average of 85 persons per square mile for Virginia and 52 for the nation as a whole.

Between 1930 and 1950 the population has shown a greater percentage gain than that of any other Virginia metropolitan area. The total today is estimated at almost 200,000 persons.

Total business volume for the area during the past 12 months was estimated to be nearly 600 million. Income in the form of payrolls and individual profits amounts to more than $250 million per year. And estimating 45,800 families in the area this represents a family income of $5,732 and a per capita income of $1,521.

Based on figures now being released by the U. S. Census Bureau for the business census of 1954 a total of $174 million was spent by retail establishments in the area during the year. The breakdown by category was as follows:

Food Stores	$44.4 million
Eating-Drinking	10.9
Dept. & Novelty	17.8
Apparel	11.8
Furniture	12.5
Automobile	34.5
Gas Stations	11.8
Hdw. & Lumber	8.2
Drug Stores	5.6
Other Retail	16.9
Total	$174.4

An important contributor to local

The Shortest Distance

The Shortest Distance
between plans and reality . . .
blueprints and buildings . . . is striving
together toward a common goal
. . . the best community
to live in, work in.
The South has made
tremendous strides toward that goal . . .
and now looks ahead with new vigor
to the promising times ahead.
Noland is proud to have been a
part of this progress.

NOLAND company

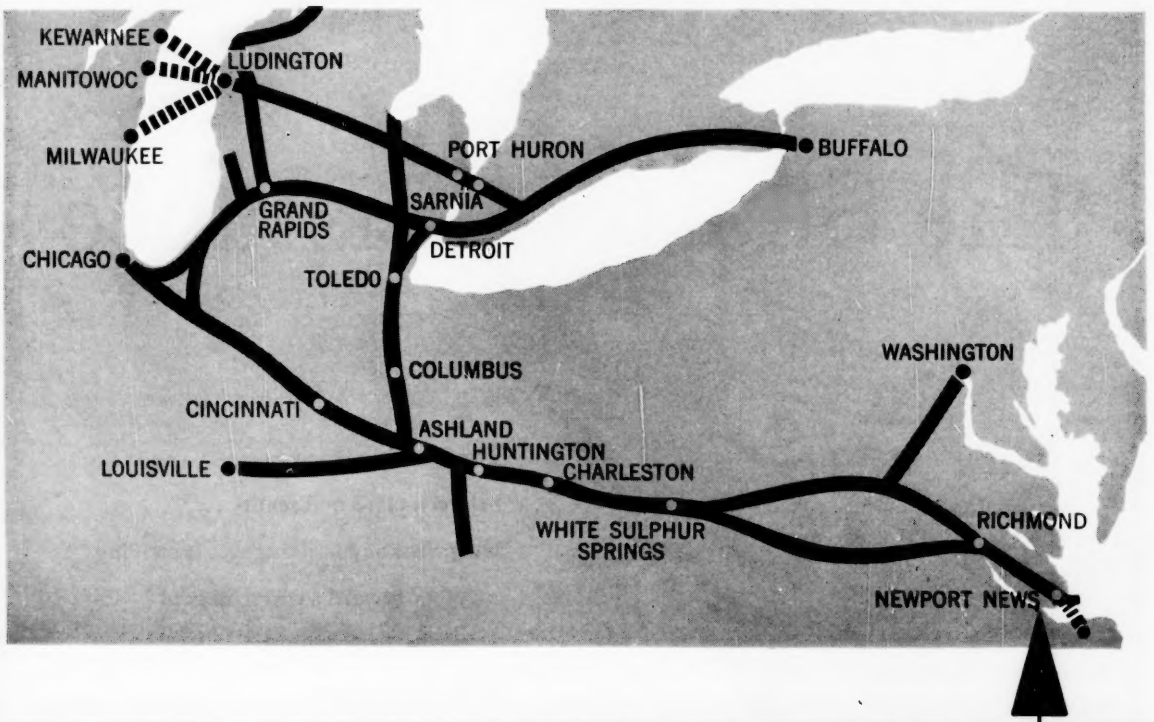
Serving the South through 29 Branch Offices

WHOLESALE DISTRIBUTORS

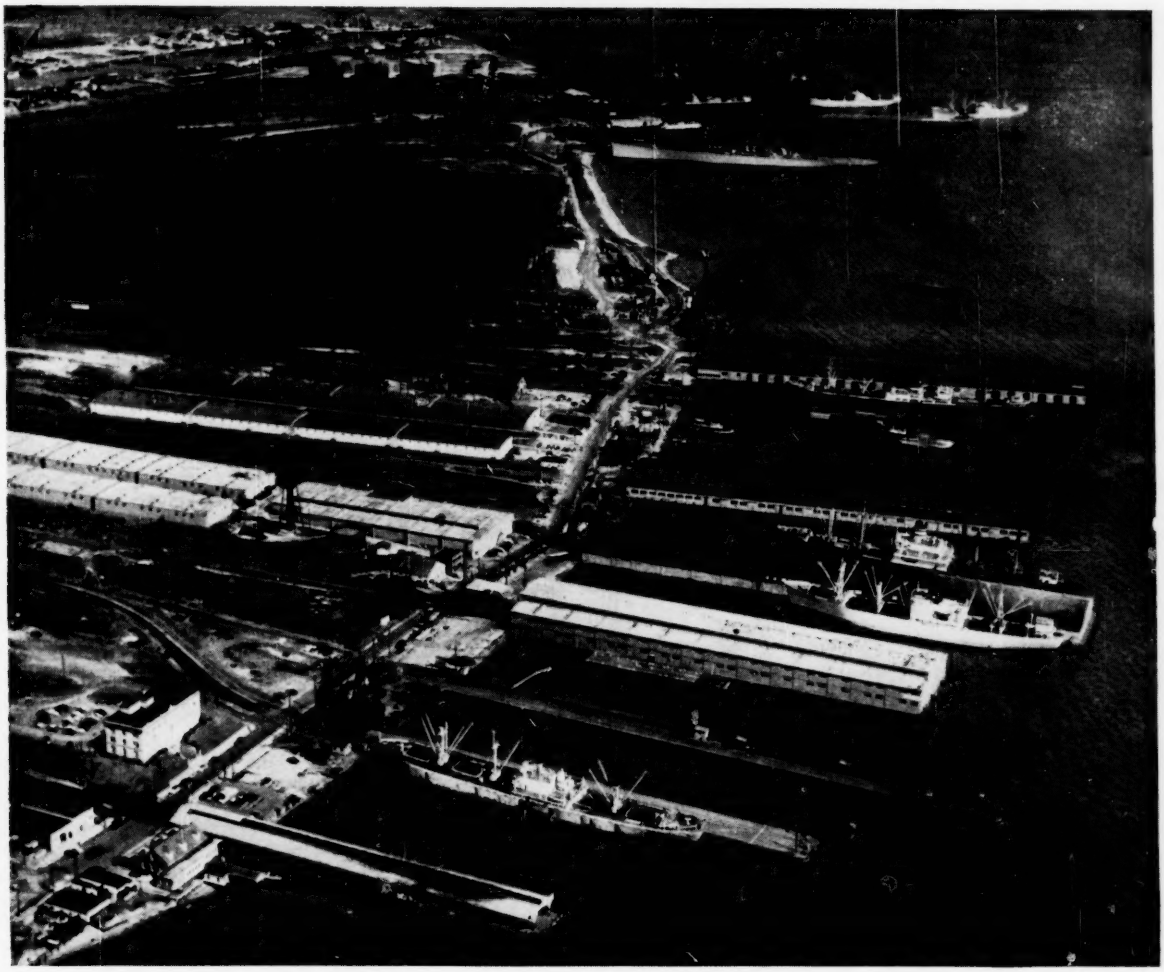
• *Plumbing* • *Heating* • *Electrical* • *Industrial* • *Refrigeration Supplies* • *Machine Tools* •

On the Main Line

between the industrial heart of America and the rest of the world



Through the efficient, economical port of Newport News, the Virginia Peninsula has ready access to world markets. Over the main line of the Chesapeake and Ohio it has direct, speedy service to the great industrial centers of the mid-west and mid-south. Whether you import raw materials or export finished goods, the Virginia Peninsula offers a strategic location. Among its other advantages are an ample supply of skilled labor with a history of good labor relations, and a delightful, year-round climate. For help in finding a suitable home for your business in the Virginia Peninsula, write to: Chesapeake and Ohio Railway, Industrial Development Department, Cleveland 1, Ohio.



C&O's modern port of Newport News is on Hampton Roads, one of the busiest U. S. harbors. On an average of every 90 minutes a ship sails for some part of the world.

If you are interested in foreign trade ask for free illustrated booklet telling why it is easier and more economical to ship through Newport News, Va.

Chesapeake and Ohio Railway

SERVING | VIRGINIA • WEST VIRGINIA • KENTUCKY • OHIO
INDIANA • MICHIGAN • SOUTHERN ONTARIO

Civic Leadership On The Peninsula

One of the prime factors in the progress of the Lower Virginia Peninsula is the aggressive leadership of a group of prominent businessmen who comprise the Peninsula Industrial Committee. The group has been active for more than nine years and has enjoyed remarkable continuity of effort.

A key man in the Committee organization is its chairman, J. C. Biggins, who has served for some 30 years as City Manager of Newport News. Vice chairmen include Lewis A. McMurran, a state legislator, and William H. Curtiss who heads an oil company.

The secretary, E. E. Falk, is a member of one of the largest real estate firms in the region and the treasurer, Irvin Reid, is president of the Citizens Marine Jefferson Bank.

One of the outstanding figures in the program is Lloyd U. Noland, Jr., who has headed numerous fund-raising drives. Noland is president of Noland Company, Inc., and is regarded as one of the most prominent industrialists in the state.

In addition to the presidency of the largest independent wholesale plumbing, heating, electrical, industrial, and refrigeration supply house in the United States, Noland also serves as president of Biggs Antique Company, Inc., and is chairman of the board of Richmond Hotels, Inc.

Lloyd Noland, Jr.

Noland's fund-raising activities typify the business atmosphere that prevails in the Peninsula area. His efforts and those of other business leaders have contributed to the advancement of a variety of programs designed to improve the civic attractions of the section.

For example, in 1951 Noland co-chairmanned with Biggins a one day campaign to raise $30,000 for the building fund of the Hampton Roads Boys Club. More than $38,000 was actually received and the club today has the distinction of being the only independently operated unit in the state for colored boys and one of seven such clubs in the entire South.

In December 1953, Noland accepted chairmanship of the Peninsula Industrial Committee's fund raising campaign with the objective of raising $125,000 for a three-year development and promotional campaign. Subscriptions totalling more than $160,000 were raised.

Last November Noland conducted another whirlwind campaign for the Advance Gifts Division of the Newport News-Warwick Community Chest Drive and collected $130,000 on the first day. His unit exceeded its goal by $34,000, bettered the previous year by 43 per cent, and reported the highest percentage gain in the nation as of December 1.

Now Noland is setting his sights on another Peninsula project, the Jamestown Festival. He will serve as a member of the Finance Committee of the organization planning a nationwide year-long celebration in 1957 to commemorate the nation's 350th birthday in the Jamestown-Williamsburg-Yorktown area.

buying power is the complex of military installations and other government institutions on the Peninsula. Among these are included the NACA Laboratories, Langley Air Force Base, Fort Monroe, the Kecoughtan Veterans Hospital, Fort Eustis, Hampton Institute, U. S. Naval Mine Warfare School, Camp Peary, U. S. Naval Mine Depot, and the Virginia School for the Blind.

From the standpoint of regional markets the Peninsula offers access to Washington on the north, Richmond on the east, and Norfolk and Raleigh to the south. Within this region is a retail market with sales of nearly $3.5 billion dollars per year.

And local developers can make a good case for selecting the Peninsula as a site from which to serve several major southern industries. For example, the 1955 BLUE BOOK OF SOUTHERN PROGRESS shows the plant investment in the textile, tobacco, lumber, furniture, and chemical industries now stands at more than $5 billion.

Supplying new equipment and machinery as well as replacing machines to these industries represents a significant opportunity in the South. And it is argued that the Peninsula with its technical know-how constitutes a logical location for such new enterprises.

Labor Resources

The Peninsula boasts an extremely good labor market. It is said that no major work stoppage from strikes has ever occurred in Peninsula industry.

Trade and utility unions are in operation. The Newport News Shipbuilding and Drydock Company workers are represented by an independent union with no national affiliation. Relationships are said to be cordial.

A survey published during the past year indicated only one Peninsula manufacturing concern having a national union affiliation.

Current wage rates are indicated below:

Machinist	$1.83 to	$2.14 per hour
Pipe Fitters	1.83	2.14
Welders	1.83	2.14
Electricians	1.83	2.14
Plumbers	1.80	2.50
Carpenters	1.90	2.20

Exceptional skills such as tool makers and pattern makers run up to $2.75 per hour.

The shipyard with its locally supervised union is believed to be responsible to a large extent for the high quality of trained workmen found in

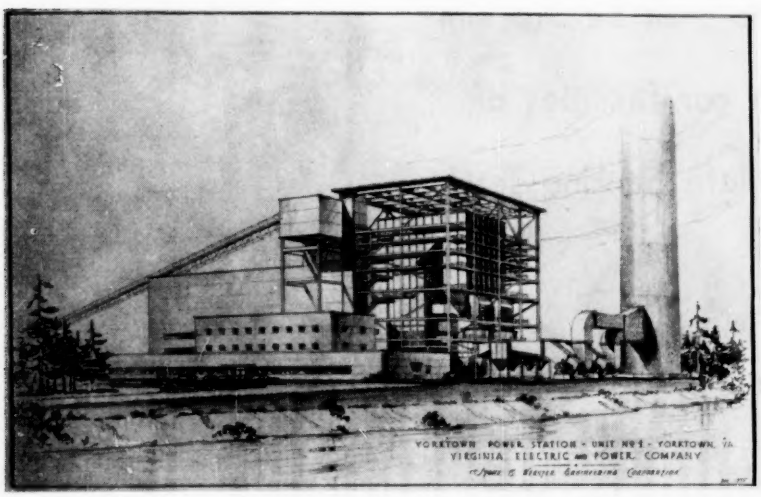
From 1891 we have watched
the industrial and commercial
growth of our Virginia Peninsula.
The progress made here has been
a record of which we are
proud to have had a part.
Further industrial and commercial
progress shall be our aim
through our facilities of
a complete banking service.

CITIZENS MARINE JEFFERSON BANK

WASHINGTON AVENUE AT TWENTY-FIFTH STREET

MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

THE NEW PIER built into the York River to serve the American Oil Refiinery is now almost complete. The $1.75 million project is being handled by Tidewater Construction Company—an aggressive Peninsula-based firm.

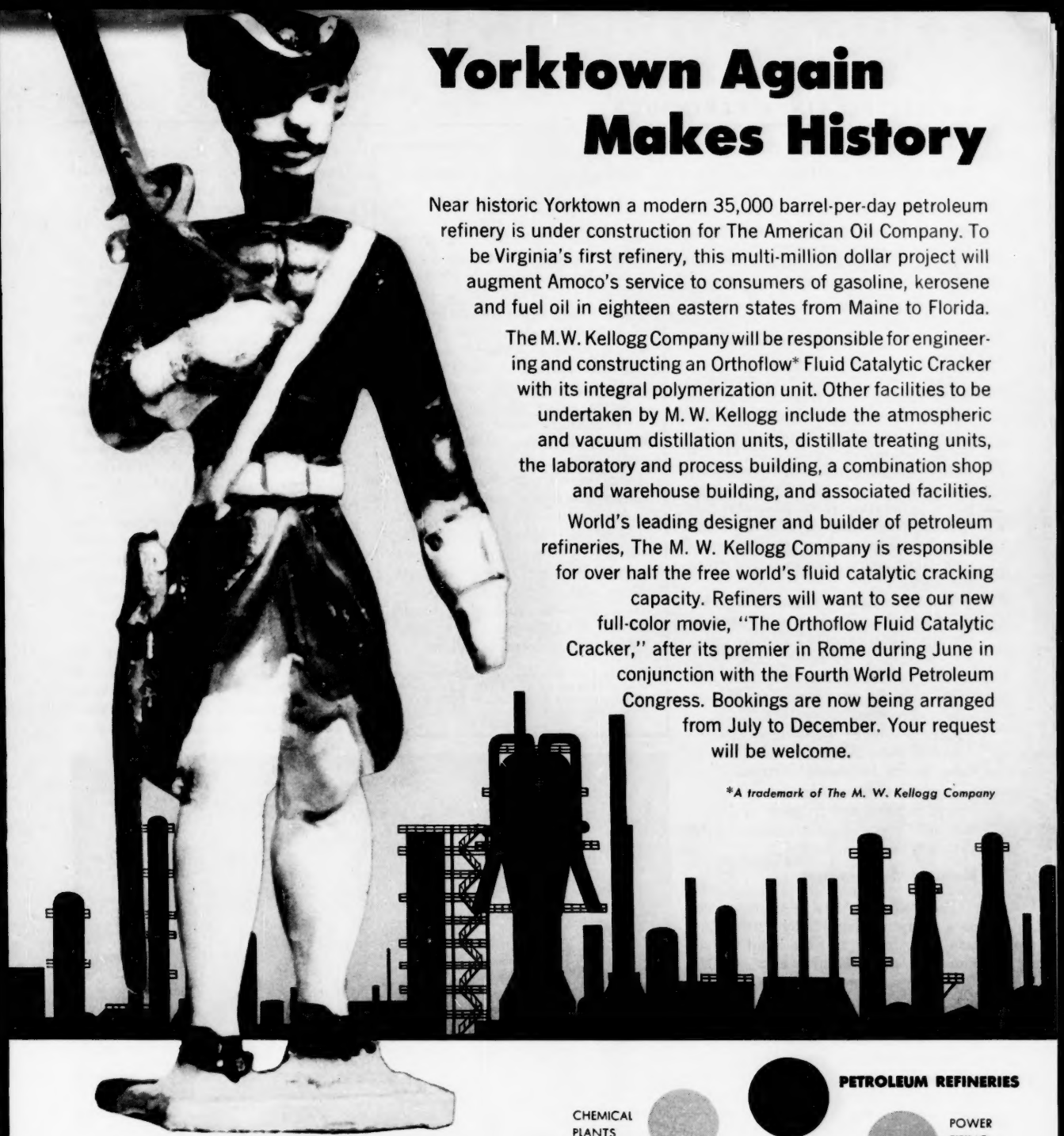


THIS IS THE architect's sketch of the new power station being built at Yorktown by Virginia Electric and Power Company. The station will obtain coke from American Oil Company's new refinery and will in turn supply the power needs of the Amoco installation.

the area. The shipbuilding company has its own apprentice school which has attracted wide notice.

Statistics indicate that at the moment there are about 2,000 unemployed workers in the area—about normal for an industrial center of this size. But the incoming manufacturer can be optimistic about a much greater labor pool in the adjacent upstate area. It is estimated that there are 10,000 available workers in this section today and if farm machinery continues in the next few years as it has in the recent past, by 1957 this available labor pool may reach 20,000. From a long range viewpoint, therefore, Virginia's labor supply can be expected to be be more flexible and expandible than that of the nation as a whole. It is significant that Virginia's rate of natural increase is above national average.

Natural increase, the amount by which births exceed deaths in any given period, has been the primary source of labor force increase for both Virginia and the United States. Since 1900 the rates of natural increase have been irregular from decade to decade for both state and nation, but in every decade Virginia's rates have been above



Yorktown Again Makes History

Near historic Yorktown a modern 35,000 barrel-per-day petroleum refinery is under construction for The American Oil Company. To be Virginia's first refinery, this multi-million dollar project will augment Amoco's service to consumers of gasoline, kerosene and fuel oil in eighteen eastern states from Maine to Florida.

The M.W. Kellogg Company will be responsible for engineering and constructing an Orthoflow* Fluid Catalytic Cracker with its integral polymerization unit. Other facilities to be undertaken by M. W. Kellogg include the atmospheric and vacuum distillation units, distillate treating units, the laboratory and process building, a combination shop and warehouse building, and associated facilities.

World's leading designer and builder of petroleum refineries, The M. W. Kellogg Company is responsible for over half the free world's fluid catalytic cracking capacity. Refiners will want to see our new full-color movie, "The Orthoflow Fluid Catalytic Cracker," after its premier in Rome during June in conjunction with the Fourth World Petroleum Congress. Bookings are now being arranged from July to December. Your request will be welcome.

A trademark of The M. W. Kellogg Company

M.W. Kellogg

ENGINEERING FOR TOMORROW

THE M. W. KELLOGG COMPANY, NEW YORK 7, N. Y.

The Canadian Kellogg Company, Limited, Toronto • Kellogg International Corporation, London.

SUBSIDIARIES OF PULLMAN INCORPORATED

Note: Since this advertisement was prepared initially for use in 1955, dates in last paragraph of text refer to 1955. Bookings of movie for 1956 are now being arranged.

those of the nation.

Electricity is supplied in the Lower Peninsula Area by the Virginia Electric and Power Company, one of the largest electricity utility companies in the South, serving about two-thirds of Virginia and adjacent areas in North Carolina and West Virginia. District offices of the Company for the Peninsula District are in Newport News, with local offices in Hampton and Williamsburg.

The Lower Peninsula is served by three 110,000 volt transmission lines, connected with the Company's wide transmission system, supplied by nine steam stations, including a 25,000 KW station at Hampton, and fourteen hydro generating plants. The Company has a generating capability, plus contractual purchases, of over 1.25 million kilowatts and is interconnected with neighboring utilities at five different points.

The new steam station now under construction at Yorktown, adjacent to the new American Oil Company refinery, will have an initial capacity of 150,000 KW or approximately six times that of the Hampton Station, which is in standby services.

Over 50,000 of the Company's more than 643,000 electric customers are located in the Peninsula District.

VEPCO also supplies natural gas in Newport News and in parts of Hampton and Warwick. More than 24,000 customers are now served.

Natural Advantages

The Peninsula has been recognized as a pleasant place to live since Captain John Smith and his band arrived more than three centuries ago.

Extremes of temperatures are unusual on the Lower Peninsula. The average mean is 61.8 degrees, ranging from 41 in January to 78 in July.

Surrounded as it is by water, the area provides innumerable opportunities for boating, swimming, fishing and other water sports. But the prime attraction is the multitude of points of historical interest.

Perhaps best known is Williamsburg, the restored Colonial capitol of Virginia. With the support of John D. Rockefeller, Jr., a local organization has restored an entire city area to pre-1800 conditions.

More than one hundred 18th century buildings have been restored to original appearance and approximately 330 long-forgotten buildings have been reconstructed on their early sites. About 50 of the Colonial gardens which once graced the city have been planted again with the same flowers and shrubs that grew in Williamsburg in the 1700's.

Of similar interest is historic Jamestown which is called the cradle of the nation. Plans are underway now to hold a Jamestown Festival in 1957 to commemmorate the establishment of the first colony on May 13, 1607.

While the celebration will center around the historic sites of Jamestown where the colonists erected the capital that served for nearly a century, it will also include Williamsburg, the second capital, and Yorktown, the picturesque port where Washington defeated Cornwallis in 1781.

In 1957 for the first time these three historic sites will be interconnected by a new Colonial Parkway. Plans are underway for a group of impressive exhibition buildings to be located at Jamestown in connection with the festival.

Another unusual attraction on the Peninsula is the Mariners Museum at Newport News. World-wide in scope and educational in purpose the showplace displays the maritime accom-

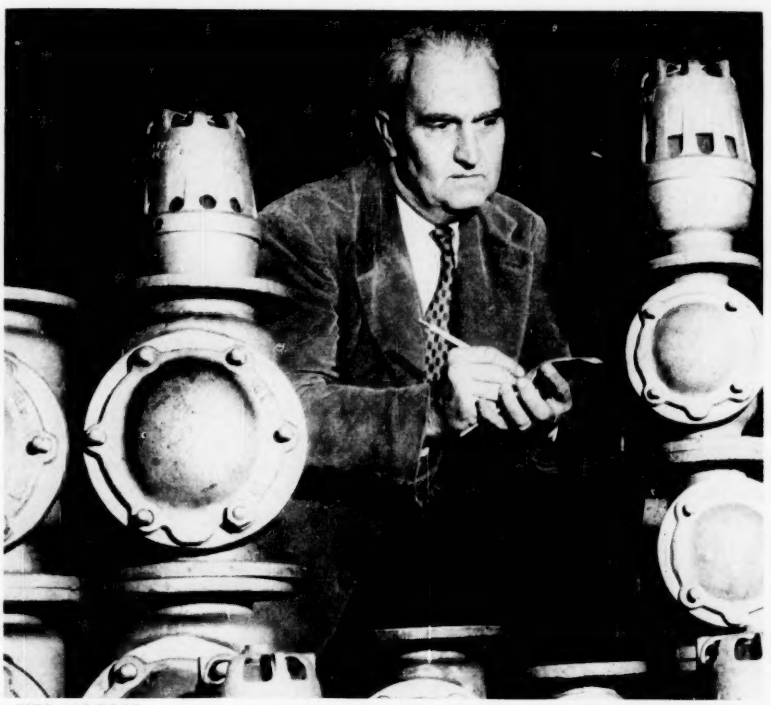
AMERICA'S FIRST FACTORY

The Lower Virginia Peninsula lays claim to the site of the nation's first industry.* A group which included eight glassmakers arrived in Jamestown in 1608 and set up a "factory" in a forest about a mile from the settlement.

Thus, Jamestown had America's first plant—a dozen years before the arrival of the Pilgrims at Plymouth in 1620—and, moreover, a cargo of glass was the first manufactured product shipped from these shores. In his "Historie of Virginia" Captain John Smith wrote "We sent home ample proof of pitch, tar, glass."

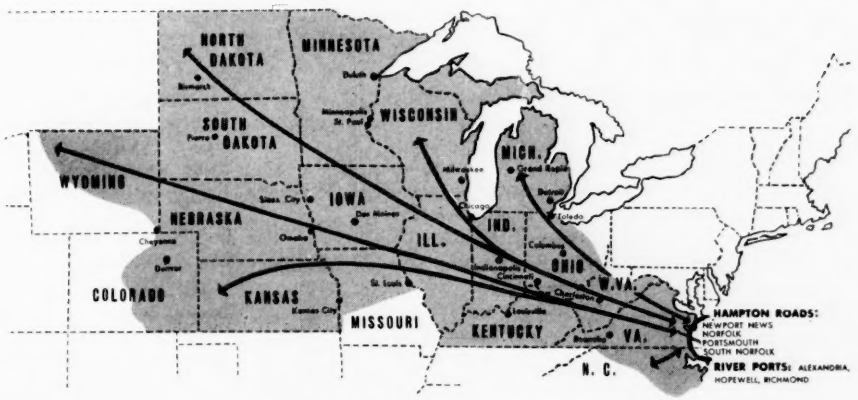
Fragments of glass found among the ruins at Jamestown indicate that bottles, vials, and drinking glasses were produced there and exported to England. It is probable that glass beads produced in the plant were used to buy land from the Indians.

*From the History of Glass Containers, published by The Glass Containers Manufacturers Institute, 99 Park Ave., New York 16, N. Y.



BIRD HOOPER checks valves made by his firm, Hooper Valve and Engineering Corporation, for use in shipyards along the East coast and in many foreign ports. His is one of the many Peninsula industries keyed to marine activities.

HOW TO MAKE MONEY...

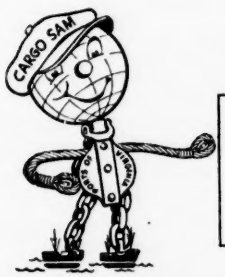


A penny saved is a penny earned — and three cents saved (per cwt.) is many dollars earned when applied to your export shipments.

From many points on this map, *you can save up to 3¢ per 100 pounds on overland rates for ocean cargo when you route through Hampton Roads.*

On import cargo, the overland savings run as high as 8¢ per hundred pounds, via Hampton Roads.

You can make money by routing your ocean freight through Hampton Roads. Let the Virginia State Ports Authority give you complete information about your specific shipping problems.



Contact any of these offices . . .

EAST-NORTH	MID-WEST	WASHINGTON	BUREAU FOR EUROPE
52 Broadway	327 So. La Salle St.	1616 "K" St., N. W.,	Virginia House
New York 4, N. Y.	Chicago 4, Illinois	Washington 6, D. C.	140 Avenue Franklin Roosevelt
Phone: Digby 4-5650	Phone: Wabash 2-2122	Phone: Sterling 3-2290	Brussels, Belgium
			Phone : 48.05.51
			Cable: VASTPORTS, Brussels

OR DIRECTOR, BUREAU OF COMMERCE

Virginia State Ports Authority

254 GRANBY ST, NORFOLK 10, VA.

Phone MAdison 2-1671

"SOUTHLAND," a new regional shopping center in Hampton, reflects the latest in urban planning. It will be situated on a 60-acre tract within 20 minutes driving time of 192,000 people. The property is being developed by Southland Corporation headed by Robert J. Fiscella of Hampton.

plishments of all times and of every nation.

Also in Newport News is the War Memorial Museum of Virginia. It is said to contain the greatest collection of relics from World Wars I and II in the United States.

And at Fort Monroe is the Jefferson Davis Casemate (a casemate is a chamber in a fort wall). This is the spot where the Confederate president was held in captivity from 1865 to 1867. The display also includes a Monitor and Merrimac room which contains historical data concerning the two famed warships which fought off Fort Monroe in 1862.

These are but a few of the attractions which enhance interest in life on the Peninsula.

Civic Services

With respect to education the area is witnessing an almost continuous building program for schools.

Over one hundred new classrooms in new buildings have been added and numerous classrooms in new school buildings are now under construction.

In addition to new construction, additions are constantly being made to modernize and re-equip existing facilities. The full population of the area is staunchly behind educational progress and thereby strengthens the caliber of work now being pushed as well as that planned for the future.

In addition to the regular public school system, there are two parochial schools. The Newport News Shipbuilding and Dry Dock Company apprentice school, mentioned earlier, is a fully accredited Junior College.

Hampton Institute, founded in 1868 by General Samuel Chapman Armstrong, is one of the nation's leading schools for the education of Negroes. Courses are offered in agriculture, business education, home economics, library and nursing, along with a summer school for teachers and for those training for various trades.

Scope of the school facilities on the Lower Peninsula are as shown in the following table:

City	*No. of Schools*	*No. of Pupils*
Hampton	13 white	10,843
	6 colored	2,836
Newport News	7 white	3,997
	4 colored	4,653
Warwick	7 white	7,400
	4 colored	3,074
York County	4 white	2,428
	2 colored	880

Expenditures per pupil per year for the Tri-Cities and County during 1954-55 were: Hampton, $161.16; Newport News, $226.13; Warwick, $167.82; and York County, $179.89.

JAMES M. STEWART, president of Dolphin Molding Company, Inc., checks a new product being readied for market.

Serving as the Lower Peninsula's facility for higher education, the College of William and Mary at Williamsburg was chartered in 1693. In the Raleigh Tavern students of the college are said to have founded, in 1776, Phi Beta Kappa, the first Greek-letter honor fraternity.

The College offers courses in liberal arts, and in pre-professional, and professional curricula. It is co-educational and while a majority of the students are residents of Virginia, others from all sections of the United States are included in the student body.

With respect to housing the Lower Peninsula, like a lot of other boom areas, is having to expand rapidly to meet demands. There has been intense construction activity since the end of World War II.

With respect to taxes the site-seeking industrialist will also find the Virginia picture to be encouraging. Last year state income taxes were cut 20 per cent at a time when most of the 32 states having such levies were seeking increases. This accomplishment is the result of government thrift.

Since the end of the last war, and even before, the governments of the State, and especially the governors have shown themselves to be highly expense-conscious. As has been said by one of Virginia's Budget Department officials, "the only way to keep taxes down is to keep government costs down."

Income tax rates in Virginia range from 2 per cent to 5 per cent for individuals and have a set rate of 5 per cent for corporations. New York, the nation's most highly industrialized state has income tax rates of 2 to 7 per cent for individuals and 5.5 per cent for corporations.

There seems little doubt that industrialists will be inclined to look favor-

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● **VIRGINIA ENGINEERING COMPANY, INC. has** a 40-year record of successful and satisfactory completion of more than 1,300 projects including, among other classifications, practically every type of Industrial Construction. Its list of industrial clients includes some of the outstanding names in American Industry. In the performance of these individual projects, several forms of contract were used, including lump-sum, resulting from competitive bidding; negotiated lump-sum; guaranteed maximum and fixed fee, with and without participation in savings; cost-plus-a-fixed-fee; and other forms as selected by the client.

Its schedule of 24 contracts currently under construction includes Industrial Projects for the following clients at the locations shown:

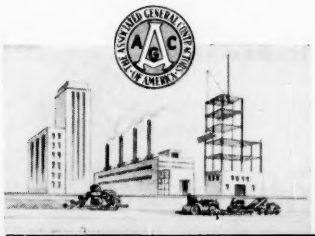
AMERICAN OIL CO. (M. W. KELLOGG CO.)—York County, Va.

GENERAL ELECTRIC CO.—Louisville, Ky.

NEWPORT NEWS SHIPBUILDING & DRY DOCK CO. —Newport News, Va.

VIRGINIA ELECTRIC & POWER CO.—Hampton, Va.

WESTINGHOUSE ELECTRIC CORP.—Fairmont, West Va.



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GENERAL CONTRACTORS

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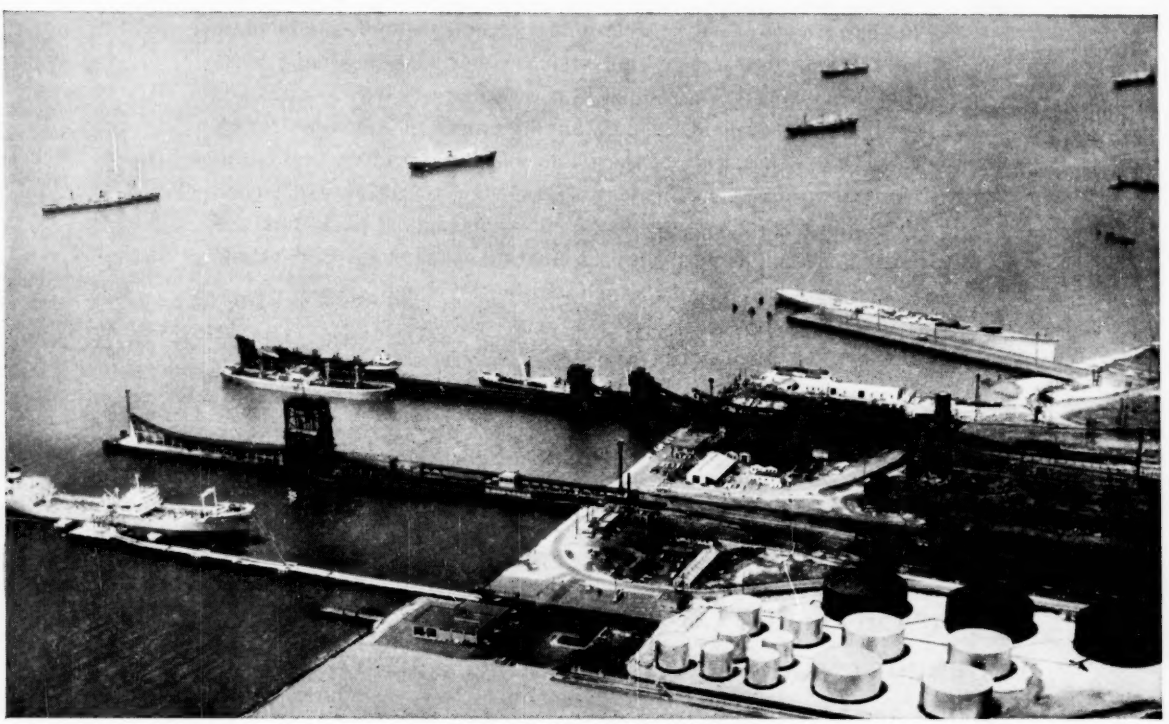
More Power
TO THE
Industrial South



A short time back, Esso Standard opened its new Bulk Terminal at Newport News. The reason for such a costly expansion? Simple. To meet the oil power needs of the Industrial South – present and future.

All of us are using more gasoline and oil. Our commerce and industry, growing at a mighty rate, are hungry for all the solvents, jet fuels, kerosene, bunker oil, diesel fuel we can serve up to them! Feeding the Industrial South with that kind of power calls for a 22,000,000-gallon-capacity tank "farm" supplied by the Esso Tanker Fleet.

From this vast storage supply, tank trucks, railway cars, barges and pipe lines distribute the many products.

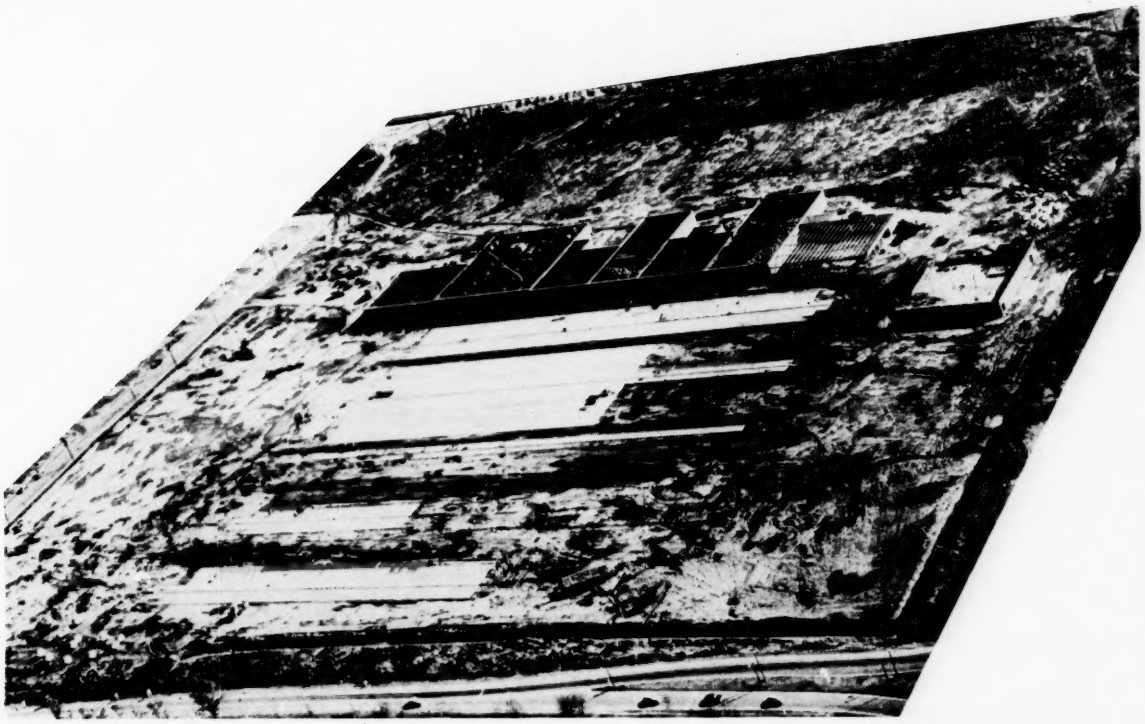
Time is saved all the way around. At the Chesapeake and Ohio piers for instance, ships can bunker and take on a coal cargo at the same time! A full day's loading time is saved by these modern, efficient facilities.

What all this means is faster service and greater assurance of ample supplies of petroleum products. Dealers and users will get product delivery direct-from-terminal or quickly from smaller depots.

We're certainly proud of our Newport News installation, and fully intend to continue keeping pace with the growth of the Industrial South.

ESSO

ESSO STANDARD OIL COMPANY



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3000 WARWICK AVENUE — NEWPORT NEWS, VIRGINIA

ably on Virginia's "automatic tax cut" law under which last year's reduction occurred. Under this law, the State income tax is automatically reduced whenever revenues exceed the cost of running the government. If the State were one of those many accustomed generally to run in the red, the law would be of little avail, but such is far from the case. With but one exceptional year, Virginia has operated in the black for a period going back 25 years.

Peninsula Industrial Committee

The prime motivating force in the development of the local economy is the Peninsula Industrial Committee with headquarters in Newport News. The staff is headed by Louis C. Purdey, an aggressive executive with wide experience in industrial development activities.

And Purdey has the enthusiastic support not only of local business leaders but of the entire community. The Industrial Committee has succeeded in bringing together a variety of interests to work jointly for the improvement of the area. And in serving as a clearing house for industrial facts, the Committee makes it possible for incoming industries to find sites and buildings with a minimum of effort.

Those who want further information about the "jet-propelled peninsula" are advised to contact Mr. Purdey at the Industrial Committee headquarters, 237 28th Street, Newport News. Also, it will be worthwhile to scan the variety of publications available to describe opportunities both on the Peninsula and in the state of Virginia. Among these are:

General Physical and Economic Feasibility of Industrial Plant Locations on the Lower Peninsula of Virginia. The Peninsula Industrial Committee, P. O. Box 92, Newport News, Va., 1955, 134 pp.

The Ports of Greater Hampton Roads, Annnual 1953, Hampton Roads Maritime Association, Norfolk, Va., 200 pp.

Sailing Schedule from Virginia's Ports, Va. State Ports Authority, 254 Granby St., Norfolk, Va., Nov. 16, 1955, 10 pp.

Newport News—Rail and Ocean Link to the Commerce of the World, World Commerce Dept., Chesapeake and Ohio Railway, C & O Building, Newport News, Va., 24 pp.

Looking for an Easier Way? (Ship through Newport News, Va.—It's so much easier and saves money), World Commerce Dept., Chesapeake and Ohio Railway, C & O Bldg., Newport News, Va., 16 pp.

THE PENINSULA'S ace industrial developer, Louis Purdey, points out site features to a group of visiting industrialists. Purdey is now pushing a new 821 acre industrial district in the Copeland-Newsome Park section.

Tabular Summary of Foreign Waterborne Commerce of Virginia Ports— First Six Months and Second Quarter of 1955 Compared with First Six Months and Second Quarter of 1954, Virginia State Ports Authority, Norfolk, Va., Nov. 1955, 36 pp.

The Virginia Tri-Cities Metropolitan Area, *Daily Press and Times Herald,* Newport News, Hampton, and Warwick, Va., 8 pp.

The Ports of Virginia, Virginia State Ports Authority Office, 254 Granby Street, Norfolk 10, Va., 26 pp.

Inventory of Economic Research Studies in the Fifth Federal Reserve District No. 5, compiled by the Federal Reserve Bank of Richmond, Va., Jan. 1955, 43 pp.

Labor Resources and Labor Income in Virginia, Vol. 1, The Advisory Council on the Va. Economy, Division of Planning and Economic Development, Va. Dept. Conservation and Development, Richmond 19, Va., July 1953, 100 pp.

Labor Resources and Labor Income in Virginia, Supplement to Vol. 1, The Advisory Council on the Va. Economy, Division of Planning and Economic Development, Va. Dept. Conservation and Development, Richmond 19, Va., July 1953, 23 pp.

Labor Resources and Labor Income in Virginia—Labor Income and Per Capita Income, Vol. II, The Advisory Council on the Va. Economy, Division of Planning and Economic Development, Va. Dept. Conservation and Development, Richmond 19, Va., July 1953, 42 pp.

Virginia Tax Laws—A Brief Digest for Taxpayers, 1952 Revision, Va. State Chamber of Commerce, Richmond, 42 pp.

Marketing in Virginia—Report of the Committee on Markets and Marketing, The Advisory Council on the Va. Economy, Va. Dept. Conservation and Development, Richmond 19, Va., May 1951, 75 pp.

Virginia Mineral Localities, by Richard V. Dietrich, *Bulletin of Va. Polytechnic Institute,* Station Series No. 88, VPI, Blacksburg, Sept. 1953, 57 pp.

Virginia Minerals and Rocks, by Richard V. Dietrich, *Bulletin of Va. Polytechnic Institute,* Station Series No. 90, VPI, Blacksburg, Jan. 1954, 61 pp.

Carry Me Back to Old Virginia, (Historial Points of Interest), Va. Dept. Conservation and Development, Richmond 19, Va., 50 pp.

The Chemical Industry Grows with Virginia, Area Development Department, Va. Electric and Power Co., Richmond, Va., Sept. 1954, 34 pp.

Aspects of Income Growth in Virginia, *The Va. Economic Review,* Vol. 7, No. 4, Oct. 1954, 3 pp.

Iron in Virginia, by Edwin O. Gooch, Minerals Resources Circular No. 1, Va. Division of Geology, Dept. Conservation and Development, Charlottesville, Va., 1954, 17 pp

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TO BE SPECIFIC: **Sites available in COPELAND-NEWSOME PARK** . . . new 800-acre industrial district located in exact center of the Peninsula's transportation systems. Sizes vary, but all sites include water, gas, power, sewerage.

For factual brochure and/or specific information . . . Communicate in confidence with:

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237 28th Street, P. O. Box 92
Newport News, Virginia—Phone 2-3243

J. C. BIGGINS
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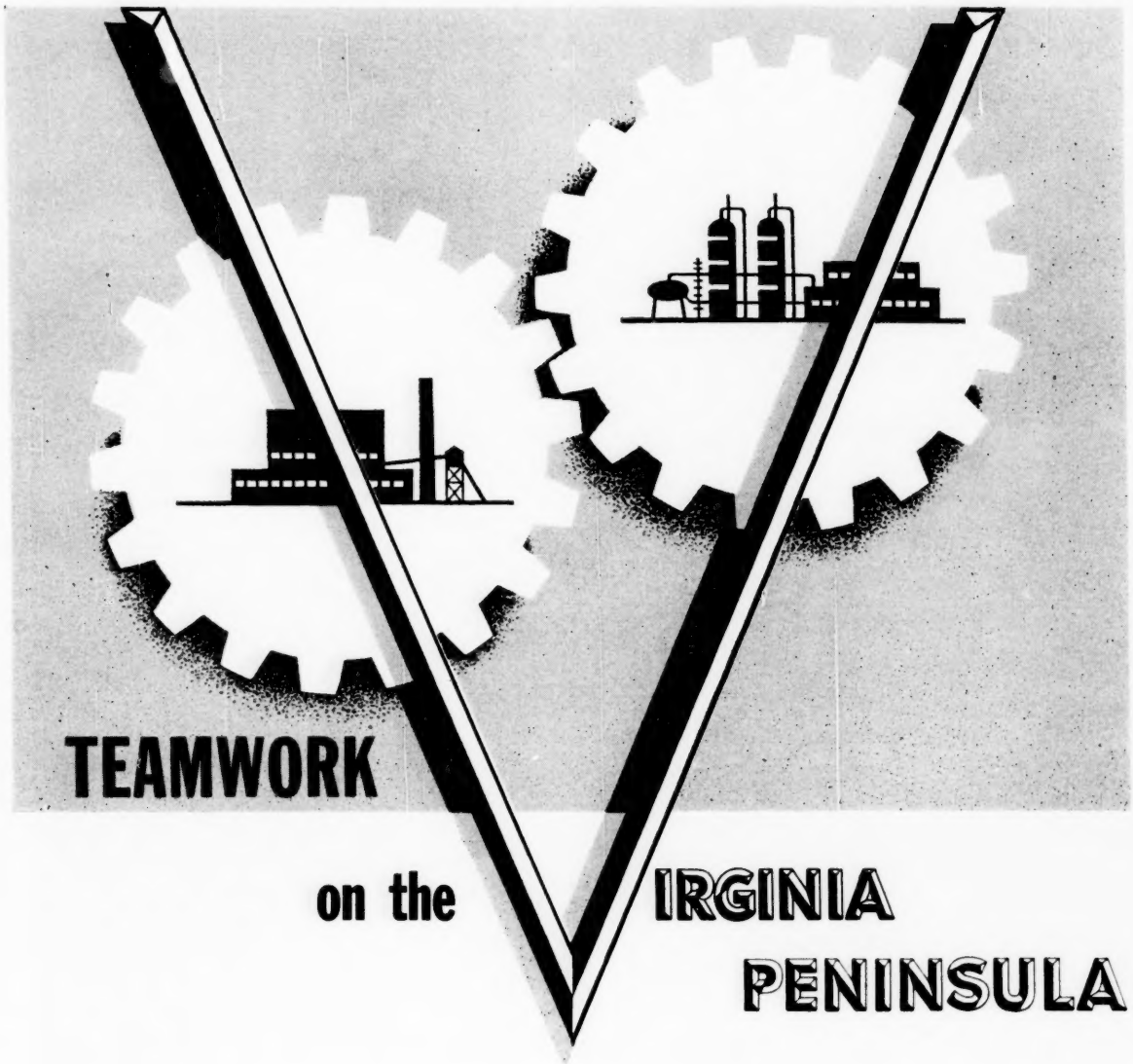
LOUIS C. PURDEY
Industrial Commissioner



The project is under way.

VEPCO has started work on a $24 million electric power station near Yorktown, Virginia. Immediately adjacent, American Oil Company is constructing Virginia's first oil refinery.

VEPCO will supply electric power Amoco needs to "crack" crude oils. Coke and gas, end-products of "cracking" will be utilized by VEPCO for use in producing *more* power. An endless chain of industry cooperation.

This is an outstanding example of teamwork by two industries for their mutual advantage, here in "THE TOP OF THE SOUTH"—where Vepco's electric generating capacity in 1955 was stepped up by 300,000 kilowatts, with 300,000 Kw more authorized and ready soon.

VIRGINIA ELECTRIC and POWER COMPANY

Walter I. Dolbeare, Vice President—Area Development, Electric Building, Richmond 9, Virginia. Phone 3-4261

STANDARD EQUIPMENT in all Ansul company cars is Saf-Driv belt, being fastened by employee to give himself added protection while driving.

ANSUL CHEMICAL FINDS SEAT BELTS SAVED LIVES FOR FIRM IN '55

KNOXVILLE. If your firm is not providing safety belts in company automobiles you may be taking unnecessary risks with your key personnel.

For the experience of Ansul Chemical Company definitely indicates that safety belts are worth the investment. This is evident in the results of a survey of the driving records of Ansul salesmen during the past year.

Several years ago Ansul installed safety belts in all company-owned cars as a part of a general safety campaign. The company is particularly safety conscious because its business is the sale of fire fighting equipment and refrigeration protective devices as well as industrial chemicals.

Last year Ansul Company cars were driven 1.5 million road miles and were involved in seven serious accidents. All except one man escaped uninjured or with minor abrasions.

The seventh man *who was not wearing his safety belt* was hurled halfway out of his car and dragged along the highway. He died several hours later in a hospital.

Moreover, there were undoubtedly some instances in which safety belts proved valuable even though automobiles were not involved in collisions. This is pointed out by T. F. Schmidt in Ansul's district office here:

"I feel sure the safety belt saved my wife from serious injury when making a sudden stop to avoid an accident—had we not had the safety belts fastened Mrs. Schmidt would certainly have gone against the dash or windshield."

The Ansul Company for years has had a safe-driving training program; has preached caution, courtesy and common sense to its drivers on the highways—but had equipped its cars, nevertheless, with automobile safety belts similar to those used by airplanes, as an extra precaution and recognition of human frailty.

Ansul chose the Saf-Driv belt, the only one currently approved by the Civil Aeronautics Authority. This type was chosen after considerable experiment and testing of all available types. Although they found that a greater measure of safety was afforded by the harness type, which fastens around the waist and shoulders, it could become cumbersome and uncomfortable on long drives required of some Ansul men. So company officials installed the more practical device that belts around the waist of the driver and front seat passenger from a secure anchorage to the car frame itself.

The secret of auto safety belt protection lies in counteracting results of rapid deceleration—recently tested with dramatic effect by motor car manufacturers and independent research groups. The belt holds the driver securely in the "safety island" in the center of the car. When the car stops abruptly, as in a head-on-collision, the driver is restrained from continuing forward at the car's rapid speed. Thus, impact energy is absorbed, and bodily injury held to a minimum.

Here's a rundown on the seven accidents involving Ansul cars last year, indicating the driver, the type of accident, automobile damage, personal injury and present condition of the driver (note that the first six men listed were guarded by safety belts; the seventh was not).

A sales manager, head-on collision, damage not listed, blow on head, fully recovered.

Company salesman, out-of-control collision, $700 damage, not injured.

Sales-service representative, sideswiped by second car; hit ditch and rolled over, $1,250 damage, two slight-

★ THE SOUTH'S HONOR ROLL ★

HERE ARE THE FAR-SIGHTED FIRMS AND INSTITUTIONS WHICH HAVE JOINED FORCES TO SUPPORT THE SASI PROGRAM FOR THE BENEFIT OF ALL THE CITIZENS OF THE REGION

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Hercules Powder Co., Hattiesburg, Miss.
Hercules Powder Co., Inc., Wilmington
Hudson's Dept. Store, Anniston
Ideal Fishing Float Co., Inc., Richmond
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Oklahoma Gas & Electric Co., Okla. City
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NOTE: Any firm doing business in the South is eligible for membership in SASI. For detailed information and membership application blank contact SASI Headquarters, Conway Bldg., North Atlanta 19, Ga.

ly bruised knees, fully recovered.

Company salesman, skidded into ditch and large boulder, $264 damage, not injured.

Company salesman, skidded on icy curve, $288 damage, not injured.

A sales manager, out-of-control, crashed guard rail, $350 damage, not injured.

Company salesman, head-on-collision, hurled from car; dragged along roadway, killed.

New Finish Protects Aluminum Surfaces

KINGSPORT, TENNESSEE. A southern chemical manufacturer is well on the way to solution of a major maintenance problem of many industries using aluminum fabricated equipment.

That's the news from Eastman Chemical Products here which has recently reported results of 16 months of tests of a long life protective coating that guards aluminum against hard winds, heavy weather and corrosive attack.

The product is a clear, water-white coating designated Ch64. It is easily and quickly applied by usual spray methods and dries at room temperature in 10 to 15 minutes. No baking or other finishing techniques are required.

The new lacquer promises to be a particular boon to manufacturers and operators of transportation equipment. To give the idea a good practical test Eastman teamed up with Egyptian Lacquer Manufacturing Company, Kearny, New Jersey, and Mason and Dixon Lines, Kingsport, Tennessee.

The researchers selected a trailer on the assembly line and treated parts of it with the new coating and left other sections bare. The trailer was put in normal trucking service 16 months ago and was examined recently for weather effects.

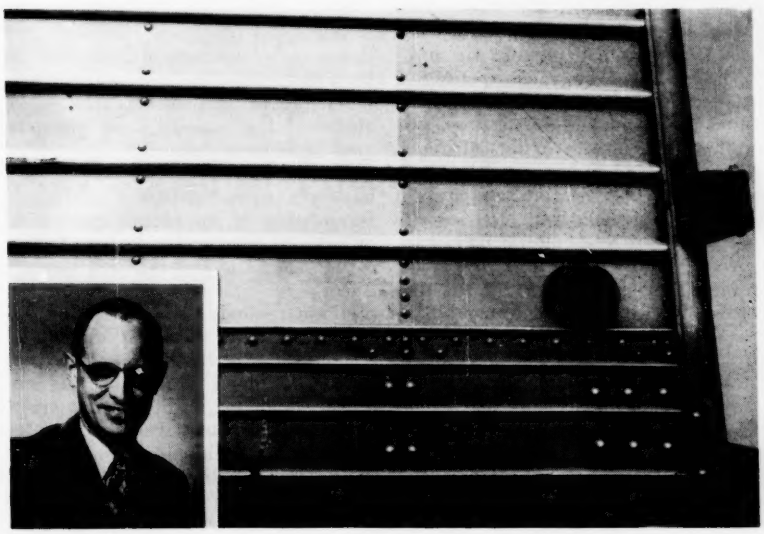
Where the Eastman coating was used the aluminum surface is in perfect condition but the bare surfaces show the usual pitting and corrosive damage.

Glass Industry Sees Rapid Expansion

MIAMI BEACH. An all-time high in glass container shipments for 1955, topped by a 5 per cent gain the first nine months of 1956, was predicted here last month by C. C. Merrifield, vice president of the Econometric Institute, Inc., an independent economic consulting organization.

Addressing some 150 members of the Glass Container Manufacturers Institute at the opening session of a three-day membership meeting at the Hotel Fontainebleau, Merrifield estimated total glass container shipments for 1955 at 134 million gross. This amounts to 19.3 billion units or 114 per capita. It is an increase of 7 per cent over 1954 shipments of 124.7 million gross, and an increase of 5 per cent over the previous all-time high of 127.5 million gross scored in 1953.

"Population has increased slightly



ALUMINUM TRAILER panel at left treated with Eastman Chemicals' new protective coating contrasts with darker, pitted panel on right. The new product is the work of F. M. Ball (inset), head of the coatings section of the chemical sales development laboratory in Kingsport.

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2. THE RECORD IS OFFICIAL! Only recently the RECORD was adopted as the official publication of the Southern Association of Science and Industry, the South's foremost regional development agency. Supported by the South's leading business firms, SASI serves as the official advisory group to the Southern Governor's Conference in the fields of science and industry. The proceedings of many important activities are carried exclusively by the RECORD.

3. THE RECORD IS DYNAMIC! The RECORD does not follow the progress of the South, but leads it! The common denominator among RECORD readers is a keen interest in the industrial development of the region. Heavy emphasis on technology assures that the RECORD, first in the South's history, will also be first in the South's future.

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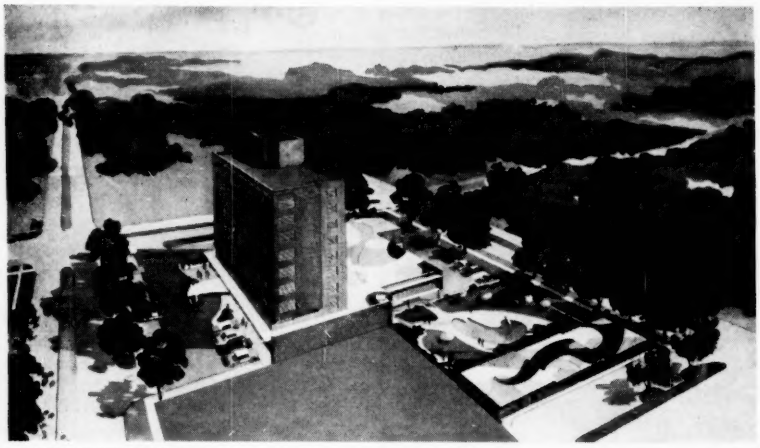

COMMUNITY PROJECT—promoted by the Chamber of Commerce and financed by more than 2,000 citizens, this new $1.7 million, 150 room hotel is under construction in Tuscaloosa. The striking new building occupies a city block and includes swimming pool and cabana area.

less than 2 per cent this year," Merrifield said, "while total consumer purchasing power has increased about 6 per cent. Glass containers have thus shown a substantial per capita gain, and slightly improved their position relative to the purchasing power of consumers."

All major grades of glass containers for domestic use showed gains in shipments in 1955 over the 1954 level, the economist told members of the Glass Container Institute, an association of 75 manufacturers of glass containers and closures and supply industries.

Citing an estimated 7 per cent gain in shipments of glass containers to the food industry this year, Merrifield said, "since per capita consumption of all food is rising only 1 per cent per year, the gain in shipments of glass food containers in 1955 is roughly twice what would be expected from the population growth and the trend of per capita food consumption.

"The competitive prosperity that is likely to characterize our country through the end of this decade will undoubtedly provide many further opportunities for new growth in glass container consumption." Merrifield said.

Use Industry Methods, DuPont Tells Colleges

MIAMI. American colleges and universities of the future must produce leaders capable of reconciling the classic patterns of the liberal arts with the advantages of modern technology, Henry du Pont, a vice president of the Du Pont Company, said here recently.

Advancing technology has led to sweeping social and cultural changes in the universities, with the prospect of virtually all Americans eventually earning college degrees, he said in addressing the 24th annual conference of Academic Deans of the Southern States.

Under these circumstances, the role of leadership "will be discharged only by those whose thinking is broad and uninhibited—whose horizons are wide enough to comprehend the world in which we live."

Technology, which he attributed to a joint effort by industry and education, is "a force that transforms men into giants, deserts into gardens, and poverty into wealth." With this powerful influence on life, it is a force which must be understood broadly, he said.

Discounting any "incompatibility" between technology and "the scholarly pursuit of learning," Mr. du Pont commented, "the growth of the American university system has paralleled our industrial growth. In addition, much of our cultural development, particularly that which brought cultural opportunities to millions of people, has come through endowments by men who shared the rewards of industrial enterprise with the general public." As patrons of the arts, he continued, American business and business men "have made contributions that might have been impressive to Lorenzo the Magnificent. For this patronage did not stop with gifts and bequests for artistic purposes, but more importantly represents the creation of a society in which there is leisure to enjoy a cultural heritage."

Discussing problems facing educational institutions Du Pont suggested that universities take a look at American industry to see if some industrial practices might not be transplanted to the educational field.

One example he mentioned was the industrial practice of using facilities at maximum potential, adjusting schedules of holidays and vacations to fit the needs of a plant that never closes down. "By staggering the vacation period, we would be able to increase substantially the number of students accommodated without an increase of physical facilities," he said. Also, better scheduling of facilities, even on existing schedules, "would provide a handsome return for the effort."

Another area that should be examined is the policy of offering education at prices below cost, he suggested. "I am glad to see that qualified students who can afford nothing, pay nothing, but I fail to see where an automatic subsidy for everyone can be justified."

"Lower prices are indeed a laudable aim in business or college, but losing money is fatal for either. I wonder if we're not going to find that selling a $2,000 college year for $1,000 to anyone, regardless of ability to pay, is poor economics in the end and may ultimately deprive more people of education that it gives."

Louisiana Paces Nation With Survival Plan

BATON ROUGE. A survival plan contract for the New Orleans area drawn up by the State of Louisiana has become the first in the country to win federal approval. Louisiana thus moves ahead of the nation's most populous area in defense planning.

The project for which the contract has been signed calls for study and formulation of an overall evacuation or survival plan with adequate testing of the plan. The Federal Civil Defense Agency has provided $25,500 for the preliminary study.

Correlation of the effort will be the responsibility of the Louisiana Department of Public Works. Federal approval was based on the rapidly growing industrial potential of the area, its importance as a shipping center and its utilization by military forces.

It was pointed out that a high altitude jet stream which can be used by enemy bombers frequently flows over this section of the country from the vicinity of the Aleutian Islands.

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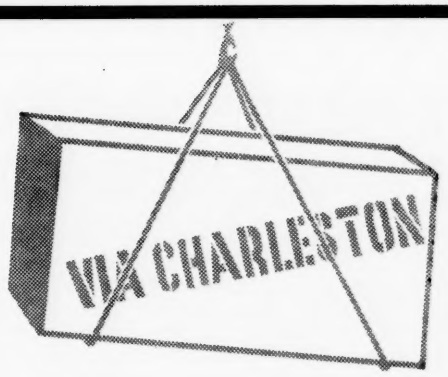

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LITTLE-PUBLICIZED CAROLINA MINERALS SPUR SOUTHERN INDUSTRY BOOM

WASHINGTON, D. C. "The unsung heroes and minor prophets who supply us with our cement, crushed stone, brick, salt, and sulfur, met recently in Charlotte," says GeoSurveys in reporting the fall meeting of the Industrial Minerals Division of the American Institute of Mining and Metallurgical Engineers.

"The glamour and the headlines of the mineral industry go to uranium, oil, aluminum, and gold, with little glory left over for the nonmetallic minerals. Yet, if every oil and gas well in Texas went dry tonight," GeoSurveys comments, "the state would still do $250 million worth of business in nonmetallic minerals. And in North Carolina, where the experts met, the entire mineral industry is based on nonmetallics."

Lithium—North Carolina's mining activity is a peculiar business that centers on deposits of outsized crystals of such unusual but useful minerals as mica, feldspar, and spodumene. Spodumene is one of the principal sources of lithium, the world's lightweight champion among metals.

Kings Mountain, North Carolina, which supplies Foote Mineral Company and Lithium Corporation of America with spodumene, has been intensively developed this year to meet the demands of Foote's enlarged lithium chemicals plant at Sunbright, Virginia, and Lithium Corporation's new plant at Bessemer, North Carolina. The Virginia plant can now produce 10,000,000 pounds of lubricating grease and other lithium compounds and reagents for use in manufacturing glass, ceramics, batteries, and in a dozen other newly developed processes.

With four times the proved reserves of the famous Keystone district in South Dakota's Black Hills, Kings Mountain has moved into first place as a producer, but Lithium Corporation and the Maywood Chemical Works, both still operating in the Black Hills, are not to be counted out. And before the end of the year, Texas will get into the act. American Lithium Chemicals, a subsidiary of American Potash & Chemical Corporation, will start production at San Antonio about December 1.

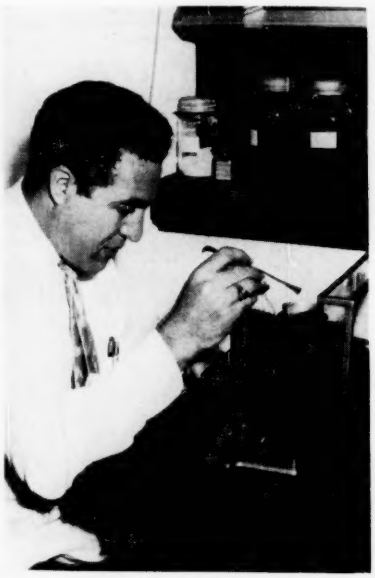
Although the parent company recovers lithium as a by-product from the brines of Searles Lake, California, the raw material for the new Texas unit will be brought from the Southern Rhodesian mines of Bikita Minerals, Limited, in which American Potash and American Metal Company hold substantial interests. Ore is already being shipped through the port of Corpus Christi.

Mica—North Carolina has been the nation's principal source of domestic mica, the electrical industry's most important insulating material. But even with some production in New England, Idaho, and South Dakota, total output falls far short of domestic needs.

In fact, annual consumption in the U. S. is equal to 40 per cent of the known reserves, and India and Brazil furnish most of our requirements. The 1954 discovery in North Carolina of what is probably the biggest and best mica deposit ever found in the U. S. must therefore be rated as one of last year's most significant events in the mineral industry.

The deposit lies close to the state's common boundary with Georgia and South Carolina, and the mine has been developed rapidly into a producer by the Minerals Processing Company of La Grange, Georgia. A yield of 2,500 pounds of sheet mica a day is the immediate goal, or about a sixth of our annual consumption.

Mining and milling problems in recovering spodumene, mica, and associated minerals, as well as delivering products of uniform quality to the chemical plants that use them, were the principal concerns of the mining experts meeting at Charlotte. They cheerfully prophesied a continuing rise in demand, which has increased twelvefold for lithium and sixfold for mica in the past twenty years. In fact, as they toured the Kings Mountain deposits, gold completely lost its traditional standing, and one geologist was overheard saying dramatically to his mining engineering companion, "There's spodumene in them thar hills!"



A NEW research program is underway in the USDA Southern Regional Laboratory in New Orleans to provide additional data on the suitability of cottonseed meals for poultry and swine feeding. The cooperative project is being aided through a fellowship established by the National Cottonseed Products Association.

Biagio Piccolo (above) has been appointed to the fellowship and will work in New Orleans under the direction of Dr. V. L. Frampton. A number of state experiment stations and industrial firms will participate in cooperative tests.

Life Span of 115 Years Seen In Half-Century

MEMPHIS. A University of Tennessee College of Medicine physician predicts that within 50 or 100 years, perhaps sooner, living to be 115-120 years old "will be accepted."

"To die at 80 or 90 without death being caused by accident will be a reflection on one's character and habits," Dr. Robert A. Davison believes.

"To live to be 140 will be desired."

Director of the General Practice Department of the U-T College of Medicine, Dr. Davison asserts that, in the future, medical men will not be treating heart or liver disease, they will be preventing it. "They will be prescribing diets for the prevention of illness."

"There are four basic biologic areas that govern the health and vitality of man," Dr. Davison says. "One of these is his genetic makeup—his heredity. "With this phase we have little control."

The other areas are his diet, his physical exercise and his psychological makeup.

"In the future," the physician says, "it will be the mark of the intelligentsia to eat properly; it will be stylish not to commit gustatory suicide." Diets will

be prescribed as physicians now prescribe drugs.

"The patient will receive prescribed diets which will be properly balanced for his age, sex, size and occupational activity," the doctor says.

Completely balanced meals will be packaged and shelved in the huge super markets and in as many varieties as one desires, he adds. If one wishes to eat an unbalanced meal he will have to grow it.

Dr. Davison explains that with modern transportation, man is becoming sedentary. While this may fit the mental desires of man, it does not conform to the physical design of his body, which he cannot change. Man was designed to move, to use his muscles, and stimulate his circulation with spurts of activity.

"The medical profession of tomorrow must encourage and prescribe physical activity," according to the U-T director. "Instead of prescribing medicinals, the physician will outline a program of physical exercises instituted in childhood and promoted through youth, adulthood and old age."

Man is more than an eating and physically active organism, however. He is also a thinking, reasoning, worrying or happy being, subject to the internal and external stress of thought and environment, he says. "His thoughts, concerns, frustrations and anxieties affect not only his mental outlook on life, but the organic diseases that may intrude upon his physical being."

Thus, the development of peace of mind in patients, as well as promoting a balanced food intake and adequate exercise, will be the main concern in the future practice of medicine, says Dr. Davison.

Productivity Increase Vital, Texans Told

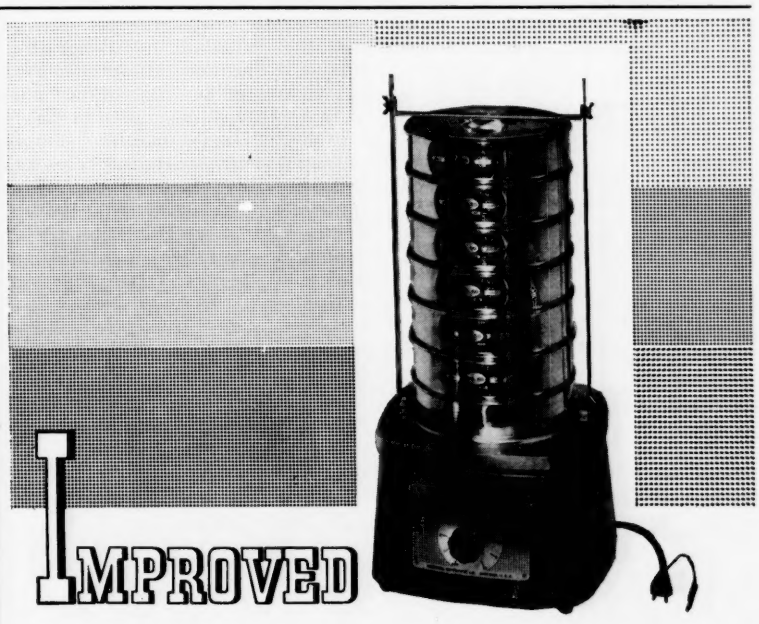
DALLAS. No political system in the world can keep a promise to give its people more than they produce, Wallace E. Gordon, director of advertising for the Du Pont Company, told the annual convention of the Southern Seedsmen's Association here recently. "A nation's productivity must rise as its population rises," declared Gordon. "Otherwise it faces a declining standard of living, migration, war, or existence on the charity of others."

The speaker cited figures showing that this country's population has increased about 25 per cent during the last 15 years, while total output of our national economy has increased over 85 per cent. Forecasts indicate that by 1975, population will have increased by another third, while national output, if the historical rate of increase continues, will have gone up nearly 90 per cent—boosting the American standard of living higher than ever.

Discussing the effect of mechanization in industry and agriculture, Gordon said most new machines "do not mechanize men. They give men more opportunity to be human." As an example, he pointed out that throughout the South there are plantations that once had dozens of tenant families for the arduous labor of planting, chopping and picking cotton.

But with mechanized equipment, high-quality seed, and labor-saving chemicals, the modern cotton grower does not need this large supply of labor. Improvements in farm production cut the costs of producing the crop, give farm people more leisure time, and free youngsters for more schooling.

They also draw more and more factories into the nation's farming areas, so people can work where they want to live. The result is that fewer and fewer farmers produce more and more for the increasing American population.



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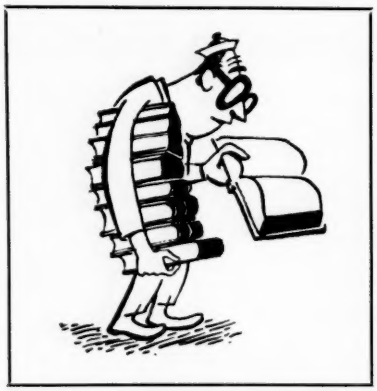

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☐ **Southern Industrial Directory, 1952 edition,** lists some 3,000 plants valued at $1 million or more, indexed alphabetically, geographically, and by product. Give name of key executive, approx. number of employees, home office. Reference section lists several hundred development groups, advertising consulates, business publications, research agencies, government offices, foreign trade institutes, trade associations, and other data sources in the South. 60 pp., 11 x 11. $5. SID-52.

☐ **Southern Industrial Directory, 1953 edition,** lists approximately 12,500 manufacturers employing 50 or more, classified by product, approx. number of employees. Includes, for example, 229 baking firms, 123 box and crate manufacturers, 208 fertilizer plants, 377 hosiery mills, 161 meat packers, 191 publishing plants, 149 steel fabricators, 270 yarn mills, 130 makers of work clothing. 84 pp., 11 x 11. $5. SID-53.

☐ **The South in 1975, full text of report of** Southern Association of Science and Industry to the 1954 Southern Governors' Conference, estimating industrial growth of South over next 20 years. SCI-JF-55. $1.50.

☐ **Directory of Southern manufacturers of** soaps, cleaners, polishes, and related products, lists more than 400 plants, name of key executives, approx. number of employees. Personnel practices in Southern chemical plants. SCI-ND-54. $1.50.

☐ **Directory of Southern manufacturers of** paint, varnish, and protective coatings, lists some 300 plants, name of key executives, approx. number of employees. SCI-SO-54. $1.50.

☐ **Directory of engineering data sources, lists** more than 500 data sources, such as technical and scientific publications of government agencies, professional societies, trade associations, and commercial publishers throughout nation. 64 pp. Issued in 1948 and originally priced $2.50. Now $1.50. DED-48.

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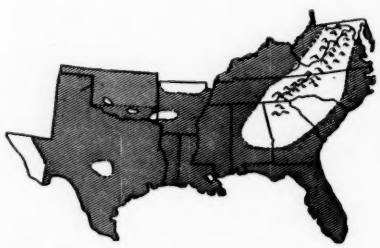
New Survey Details Natural Gas Usage

AUSTIN. Natural-gas use is soaring to new heights year by year, according to Natural-Gas Statistics, a new Bureau of Business Research publication from The University of Texas. With the great extension of interstate pipelines to population centers of the Northeast, phenomenal growth of the Gulf Coast chemical industry, and an increasing variety of uses for natural gas, this new Texas industry has grown to giant size.

Natural-Gas Statistics, written by Dr. Richard C. Henshaw, Jr., assistant professor of business statistics at The University of Texas and statistician of the Bureau of Business Research, contains the most useful and recent information available to give a complete picture of this booming Texas industry. It supplements the statistics originally presented in Economics of Natural Gas in Texas, a comprehensive survey of the industry written in 1952 by Dr. Henshaw; Dr. John R. Stockton, Bureau director; and Richard W. Graves, Tulane University statistician.



MAP from University of Texas report shows parts of South (shaded areas) where petroleum may ultimately be found.

The 87 tables and 57 charts and figures answer questions on every phase of the Texas natural-gas business—where gas occurs and what it is used for, where and how much of it is used, how large the reserves are, and other related topics.

Other Publications

Interstate Migration of the Native White Population and Native Non-White Population, by Otto H. Rosenkranz, 787 Launcelot Road, Jackson, Miss., $.35.

Gulf Coast Metals Worth $345,000,000, *Houston Business* Vol. 1, No. 3, Houston Chamber of Commerce, Commerce Bldg., Houston, Tex., Sept. 1955, 2 pp.

Richmond's Immediate Wholesale Trade Area, Research Service, Richmond Chamber of Commerce, 15 N. 6th St., Richmond 19, Va., 5 pp.

The Story of Coke and Coal Chemicals, American Coke and Coal Chemicals Institute, Washington, D. C., 32 pp.

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Additions to Virginia Mineral Localities, by Richard V. Dietrich, *Bulletin of Virginia Polytechnic Institute,* Station Series No. 105, Virginia Polytechnic Institute, Blacksburg, Va., Nov. 1955, 30 pp.

How to Build Nailed Trussed Rafters, by E. George Stern, Wood Research Laboratory, Virginia Engineering Experimental Station, VPI, Blacksburg, Va., 50 pp.

Education and Employment Specialization in 1952 of June 1951 College Graduates, compiled by National Science Foundation, Supt. of Documents, GPO, Washington 25, D. C., 1955, 78 pp., $.35.

Atmospheric Cooling Tower Performance in Florida, by G. E. Sutton, F. M. Flanigan, and D. T. Hamilton, *Engineering Progress at the University of Florida,* Vol. IX, No. 10, Bulletin Series 75, University of Florida, Gainesville, Oct. 1955, 24 pp.

A Technological Forecast for Florida in 1970, by Robert B. Bennett, *Engineering Progress at the University of Florida,* Vol. IX, No. 9, Leaflet Series, University of Florida, Gainesville, Sept. 1955, 16 pp.

Atmospheric Pollution, by E. R. Hendrickson, *Engineering Progress at the University of Florida,* Vol. IX, No. 2, Leaflet Series, University of Florida, Gainesville, Aug. 1955, 8 pp.

Faculty Advancement Through Instruction, by John C. Reed, *Engineering Progress at the University of Florida,* Vol. IX, No. 8, Leaflet Series, University of Florida, Gainesville, Sept. 1955, 3 pp.

PROGRESS NOTES

► The Georgia Ports Authority has voted to offer the Herty Founation of Savannah a site for the $250,000 permanent headquarters now being planned. Land owned by the authority would be made available to the nonprofit foundation for a continuing program of research on pulp and paper products.

► Dean R. C. Ernest has announced a gift of $450,000 from Mr. and Mrs. William S. Speed for additional facilities for the Speed Scientific School at the University of Louisville. The new gift will provide for the construction of a building for civil and electrical engineering and brings the total amount contributed by the Speed family to more than $1 million.

► North American Aviation is now conducting flight tests of its SM-64 Navaho long-range guided missile at the Air Force Missile Test Center at Cocoa, Florida. The project is being

handled by the NAA Missile Development Division.

► Union Bag and Paper is said to be considering entering the newsprint production field. President Alexander Calder was quoted during the past month as saying that an industrial engineering firm had been retained to study the proposal.

► Possibilities for substantial expansion of charcoal production in Alabama have been described by Windell Vickery of Alabama Polytechnic Institute. At present the state produces less thon one-fourth of the 10,000 tons it consumes.

► An eastern region marketing office has been established in New York by Texas Instruments, Inc. of Dallas. According to President J. E. Johnson, this is part of a nationwide expansion program for the 25-year-old electronics and geophysics firm.

► Capital for the development of new products and for expansion of existing businesses in Florida and the Southeast is now available from the newly established Florida Fund, Incorporated, in Miami. The closed-end investment trust is headed by Philip W. Moore, president.

► Speaking at the annual meeting of the Investment Bankers Association at Hollywood, Florida, Harlee Branch, Jr., of Atlanta predicted that expenditures of the nation's private electric utilities will average more than $3 billion annually for the next 10 years. Branch, who is president of the Georgia Power Company, is currently president of Edison Electric Institute.

► The conversion of Shenandoah Life Insurance Company, Incorporated, of Roanoke, from a stock life insurance corporation to a mutual life insurance corporation without capital stock was completed November 29. An amended charter giving effect to the mutualization was issued by the State Corporation Commission, and the outstanding capital stock, all of which had been acquired by the Trustees under the Plan of Mutualization, was retired and cancelled.

►The new Jordan Marsh-Miami, due to open this winter, will have an annual payroll in excess of $1.5 million, it was disclosed by Richard Van Daggett, president of the new store, larg-

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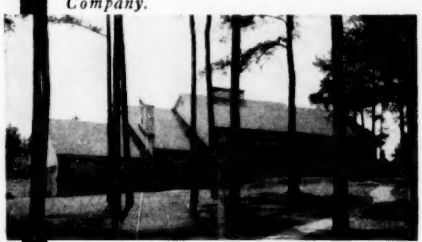

One of many modern homes in Richmond, Va. Architect, Lewis A. Dix; Contractor, Willis & Sharpe, Inc.

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► According to the Florida State Chamber of Commerce, the construction industry of the state consumed more than 5 million barrels of Portland Cement during the first six months of 1955. This was an increase of 18 per cent over the same period of 1954.

► In order to meet the increased demand in the Southeast for its soil fumigant, D-DR, Shell Chemical Corporation has installed a 1.3 million gallon storage tank at Wilmington, North Carolina. From the storage unit, located at the Shell Oil Company terminal in Wilmington, the D-D will be drummed for distribution to farmers throughout the area. This will allow for more efficient distribution of the soil fumigant, ensuring regular shipments to farmers well in advance of the planting season.

NAMES IN THE NEWS

Announcement has been made of the appointment of **E. Clarence Oden** as head of the development section of Chemstrand Corporation. He was formerly president and consulting engineer with International Petroleum and Chemical Exchange, Inc. at Lake Charles, Louisiana.

Ralph W. Burdeshaw has assumed the position of Southern District Manager of Industrial Resins Sales for the Barrett Division of Allied Chemical and Dye. His headquarters are in Greensboro, North Carolina.

Dr. George F. Potter of Bogalusa, Louisiana, has been named "Man of the Year in Tung" and awarded a commemorative plaque by the American Tung Oil Association. In the past 17 years, Dr. Potter has served as the key figure in developing the principles upon which the modern tung industry is founded.

Dr. G. L. Bridger, formerly consultant on fertilizer production and head of the Department of Chemical and Mining Engineering of Iowa State College, has joined the Davison

DAVISON Chemical's Bridger.

Chemical Company Division of W. R. Grace as Director of Agricultural Research in Baltimore. Dr. Bridger is vice chairman of the American Chemical Society Division of Fertilizer and Soil Chemistry and vice chairman of the Chemical Engineering Division, American Society for Engineering Education.

Secretary of Agriculture Ezra T. Benson presented a Department Superior Service Award plaque to a group of scientists on the USDA Southern Utilization Research Branch staff in New Orleans for their work in the development of new and highly improved methods of analysis important to research on new and expanded uses for fats and oils.

D. J. Stark has assumed his duties as plant manager of Escambia Bay Chemical Corporation in Pensacola, Florida. Stark was manager of the National Petrochemicals Corporation plant at Tuscola, Illinois. **Dr. Nat C. Robertson,** a native of Atlanta, has been appointed director of research of the same unit.

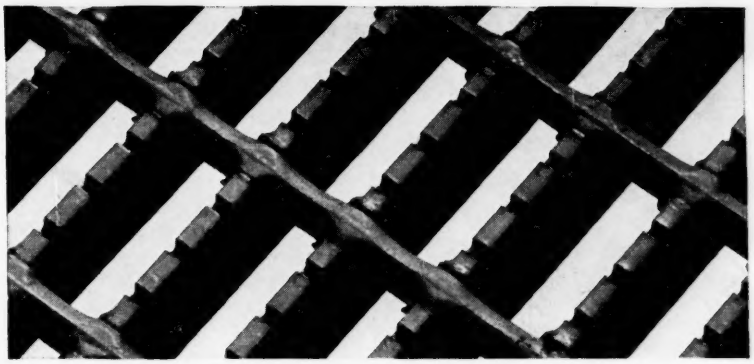
ROBERTSON joins Escambia Bay.

Cecil Shilstone of Shilstone Testing Laboratory of New Orleans was elected to a three year term on the Executive Committee of the American Council of Independent Laboratories at their November meeting held in Phoenix.

Atlantic Research Corporation of Alexandria, Virginia, has announced the following additions to their staff: **Earl D. Hilburn** and **Dr. Raymond Friedman** in the Chemical Engineering Division and **George C. Pierce** as Customer Service Engineer.

C. D. LaSusa, formerly specialist in sales of Armour and Company's chemicals used by the petroleum industry, has been named manager of the Chemical Division's newly established Southern Region. In 1955, the Division established sales territories at Houston and Tulsa and expects to open two more territories in the near future.

Dr. John H. Truesdail has been promoted to assistant plant manager at the Pisgah Forest, North Carolina, plant of the Film Division of Olin Mathieson Chemical Corporation. Announcement has also been made of the appointment of **Joseph C. Mertes** as technical service manager.



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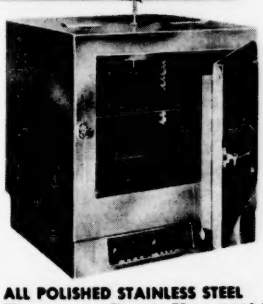

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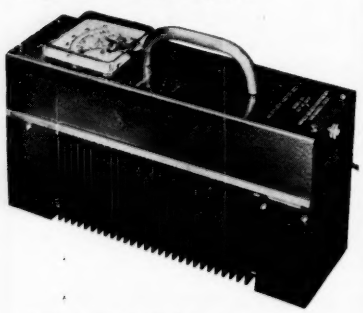

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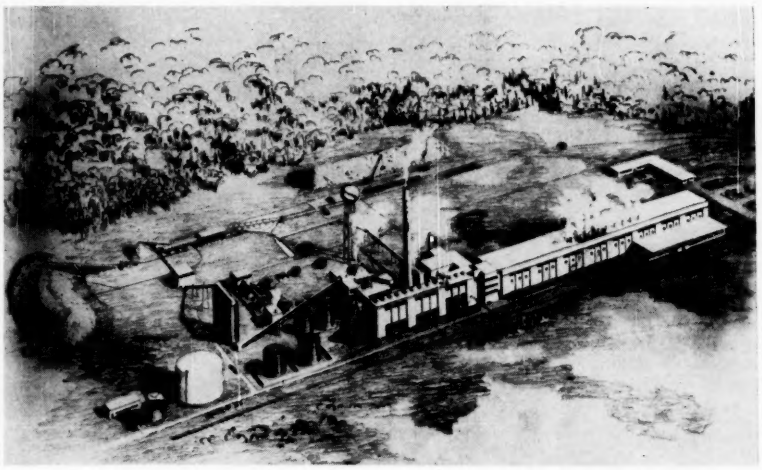

PRELIMINARY SKETCH shows layout of the new bleached pulp and board mill to be built at Brewton, Alabama, by Container Corporation of America. Total cost is estimated at $30 million.

SOUTH ADDS MORE THAN 200 NEW MULTI-MILLION PLANTS IN 11 MONTHS

ATLANTA. The South added more than 200 new multi-million dollar manufacturing plants during the first eleven months in 1955. That is the indication of a survey completed here by the Southern Association of Science and Industry in cooperation with the various state development agencies.

Industrial expansion not only was impressive in its scope but it covered a wide variety of industries, the report shows. Fields of major growth include aluminum, titanium, pulp and paper, chemicals, fertilizer and electronics. Moreover, the new units are scattered throughout the region from Maryland through Texas.

Alabama grabbed a major share of new pulp and paper mills with additional units scheduled at Brewton, Demopolis, Mobile and Naheola.

Florida landed a new $16 million oil refinery and several new chemical plants. Georgia's additions were highly diversified with one multi-million dollar brewery included.

Kentucky is tentatively scheduled to get Reynolds Metals new $168 million aluminum refinery. And West Virginia is getting a $120 million Kaiser Aluminum and Chemical plant.

More than 30 major new plants were reported in Mississippi. Texas tallied more than 40 units.

A variety of enterprises were located in Arkansas, Louisiana, Maryland, Oklahoma, the Carolinas, Tennessee and Virginia. Included were plants for manufacturing such diverse items as bicycles, electric motors, plate glass, cement, textiles, television parts, pianos, guided missiles, and atomic reactors.

Altogether, more than one thousand new plants of all sizes and descriptions were established in the region during the year. A summary of all plants valued at $1 million or employing more than one hundred workers begins on page 66.

Chemical Unit To Use Pulp Mill By-Products

PORT ST. JOE, FLORIDA. A new multi-million-dollar chemical plant will be constructed here by the Glidden Company to utilize the crude soap

skimmings created as a by-product by the St. Joe Paper Company and other southern kraft paper mills.

Announcement of the construction plans was made by Paul E. Sprague, Glidden vice president and general manager of the company's Southern Chemical Division.

Sprague said that the new unit will produce crude and distilled tall oil, high grade fatty acids, premium grade tall oil rosins and by-product pitch. It will utilize new continuous processes for treatment of soap skimmings which were developed through Glidden research and experimental work.

The new Glidden plant will be located adjacent to the St. Joe Paper Company's kraft mill and will be designed to handle 50,000 tons annually of the by-product soap skimmings.

Glidden's Port St. Joe unit will comprise the second major step in the expansion program of the Southern Chemical Division. It will be the fourth chemical plant operated by Glidden in the Deep South.

The company's Southern Chemical Division has been a substantial producer and seller of gum rosin and other prime naval stores in Georgia and Florida for many years, and it now looks to this paper mill by-product to augment the South's diminishing supply of rosin. Crude soap skimmings derived from West Florida pine pulpwood have been found to have the highest content of rosin of any such material in this country.

In addition to utilizing the by-product skimmings of the St. Joe Paper Company, Glidden will have direct access to the latter's deep water shipping and other facilities at St. Joseph's Bay on the Gulf of Mexico.

J & L Steel Container Opens Texas Plant

PORT ARTHUR, TEXAS. A new container plant for the production of steel drums to serve the oil and chemical industries of the Southwest was dedicated here last month by Jones and Laughlin Steel Corporation's Container Division.

The new plant at Port Arthur marks another step in the multi-million dollar J & L expansion program. The Corporation is stepping up its program sharply, increasing its annual ingot ca-

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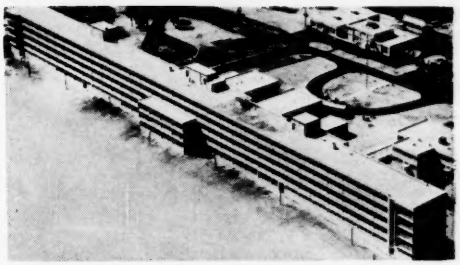

General view of new tuberculosis sanitorium in Tampa, Fla., for which Connors supplied concrete reinforcing bars. Arnold Construction Company of Palm Beach, Fla., was General Contractor.

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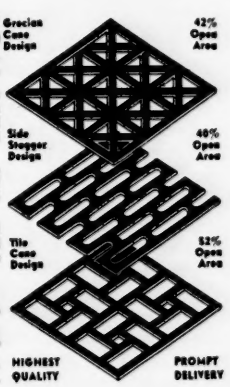

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RICHMOND 5, VIRGINIA

THIS NEW $500,000 plant will be added in Atlanta by Puritan Chemical Company. Facilities will include a new quality control laboratory, maintenance shop, and employee lunch and recreation area.

pacity over 700,000 tons, and bringing to over $250 million its expenditures for improvement and expansion projects in the period 1955-58. Including this amount, the total funds spent by J and L on improvements and expansion since the end of World War II will be more than $700 million.

The J and L site, located on Sabine Highway No. 87, comprises about 300,000 square feet of level land. The original plant was built in 1940 and was operated under the name of the Gulf Coast Steel Barrel Company. This later became the J and L Steel Barrel Company and subsequently, Jones and Laughlin Steel Corporation, Container Division. The new building is 440 feet long by 90 feet wide.

Among the newest facilities is a five-stage phosphatizing unit built to J and L specifications. The process is known as "JaLizing." "JaLizing" gives the drums a conditioned protective surface. This increases adherence and durability of painted and lacquered surfaces and makes the drum clean and dry. The process also provides an inhibiting surface which prevents the creeping of rust and provides a non-conducting bond between bare metal and paint.

The plant manufactures 55 gallon containers, both 18 and 16 gage steel, of the tight head and full open head types. In addition to supplying the containers for oil and chemical companies, it makes drums for paint companies, food processing firms and other industries in Texas.

Within the past year J and L opened a new container plant in Atlanta, indicating the company's strong interest in the South.

NEW PLANT SUMMARY

Following is a summary report of major plants established in the South during 1955. The report covers the period up to December 1, 1955. Data was obtained from the files of the Southern Association of Science and Industry and from various state development agencies.

Only those plants believed to represent an investment of $1 million or more, or employing 100 or more workers are included. Number of employees is indicated by the code: A (under 25); B (25-100); C (100-250); D (250-1000); and E (over 1000).

ALABAMA

Aliceville—S. C. Huyck & Sons (Rensselaer, New York), paper makers felt. $3.5 million. Construction began November, 1955.

Anniston—National Gypsum Co. (Buffalo, N. Y.). Multi-million. (C).

Birmingham—Dixie Electrical Mfg. Co., pole line hardware, switches and outlet boxes. $1 million. Completion est. late 1955.

Birmingham—Southern Elec. Steel Co., Hugh Bigler, Pres. Steel mill. $1 million. In operation 1955. (C).

Brewton—Container Corp. of America (New York) paper board cartons. $30 million. Completion est. 1957.

Childersburg—Liberty Powder Defense Corp. (Olin Mathieson Chem. Corp., East Alton, Ill.) P. O. Box 368, C. E. Voegeli, Resident Mgr., ordnance.

Cullman—John H. Swisher Cigar Co. (Jacksonville, Fla.). Construction began April, 1955. (D).

Demopolis—Gulf States Paper Co. (Tuscaloosa, Ala.), Jack Warner, Exec. Vice Pres., pulp mill. Multi-million. Completion est. late 1956. (D).

Dothan—E. W. Twitchell, Inc. (Philadelphia). (D).

Florence—Stylon Southern Corp. (Plant #2). $1.95 million. Completion est. March, 1956. (D).

Gordo—Parcraft Shirt Co. (New York). (C).

Guin—Minnesota Mining & Mfg. Co. (St. Paul, Minn.), reflector materials. $2 million. Completion est. late 1955.

Huntsville—P. R. Mallory, Inc., P. O. Box 800, F. B. Powers, Pres., Capacitors. $1.8 million. In operation 1955. (C).

Huntsville—Norton Co. (Worcester, Mass.). Edward Porter, Mgr., fused magnesia, fused zirconia, boron carbide. $1.3 million. Completion est. early 1956. (C).

Le Moyne—Consolidated Chemical Industries, Inc. (San Francisco), sulphuric acid. $2 million. Completion est. 1956.

Le Moyne—Stauffer Chemical Co. (New York), carbon bisulphide. Multi-million. Will adjoin present plants. Completion est August, 1956.

Mobile—International Paper Co. (New York), Erling Riis, Gen. Mgr. Southern Kraft Div., newsprint. $20 million. Completion est. 1956. (D).

Naheola—Marathon Corp. (Menosha, Wisc.), pulp and paper mill. $30 million. (D).

Selma—Cleveland Table Co. (D).

ARKANSAS

Bald Knob—Norris Dispenser, Inc. (C).

Conway—Virco Manufacturing Co., James G. Kane, General Mgr., School furniture. (D).

Crossett—Crossett Textile Paper Co., food container board. $16 million. Completion est. late 1955. (D).

El Dorado—Michigan Chemical Co., bromine. $1 million.

Foreman—Cement plant, Robert J. Smith, Dallas, Pres. $6 million.

Fort Smith—Eastern Metal Products. (D).

Little Rock—American Machine & Foundry Co., E. 17th St., bicycles. $1.2 million. Completion est. late 1955. (D).

Magnolia—Firestone Tire and Rubber Co. (Akron, Ohio). Completion est. early 1956. (C).

Marianna—Marianna Mfg. Co., Max Schuver, Mgr. Operation began 1955. (D).

McGehee—Wells Lamont Co. (C).

Osceola—Osceola Finishing Co. (Crompton Co., Warwick, Rhode Island). $4 million. Operations began 1955. (D).

Paragould—Emerson Electric Co. (St. Louis), small motors. (C).

Russellville—Bryant Poultry Co. (C).

Springdale—Ralston Purina Co., chicken and turkey feed. Construction began 1955. (C).

Texarkana—Woodlin, Inc., W. J. Woodham, Pres., aluminum window frames. In operation March, 1955. (C).

Texarkana—Dial-Graft, Inc. (C).

West Helena—Bruce Mill. $350,000. (D).

FLORIDA

Bradenton—Miller Trailers, Inc., 708 3rd St., Robert J. Miller, Pres., custom-built semi-trailers. (C).

Cocoa—Fruit Industries, Inc. (Bradenton, Fla.), Anthony Rossi, Pres., frozen orange and grapefruit juice. Completion est. late 1956. (C).

East Tampa—Southland Oil Co. (Dallas), E. Constantin, Jr., Pres. Multi-million.

Fort Pierce—Frontier Refining Co. (Denver), M. H. Robineau, Pres., crude oil refining. $16 million. Completion est. August, 1956.

Jacksonville—The Simmons Co., bedding. $2 million. Construction to begin late 1955. (C).

Lakeland—Orange State Processing Corp., 1115 S. Lincoln Ave., frozen orange and grapefruit segments, pineapple chunks. Operation began 1955. (D).

Lawtey—E. I. Du Pont de Nemours & Co. (operated by Humphreys Gold Corp., Denver), mining and separation of minerals, principally titanium bearing minerals. $3 million. Operation began 1955.

Miami—Noma Spray Division of Noma Lites, Inc. (New York), J. S. Ward, Pres., underground lawn sprinkler systems. Operation began 1955. (D).

Milton—Escambia Bay Chemical Corp., anhydrous ammonia, ammonia nitrate, polyvinyl chloride. $30 million. Completion est. early 1956. (C).

Palatka—Hudson Pulp and Paper Corp., tissue paper, bleached kraft paper. $15 million. Completion est. early 1956.

Pensacola—Gulf Chemical Co., anhydrous ammonia, nitric acid, ammonium nitrate, polyvinyl chloride. $23 million. Completion est. early 1956.

Port Everglades—Ponce Products, Inc., cement clinker grinding mill. $2.5 million.

Port St. Joe—Glidden Co., tall oil, fatty acid, tall oil rosin, tall oil pitch. Multi-million. Construction to begin late 1955.

St. Petersburg—Milton Roy Co. (Chestnut Hills, Phila.), Robert Sheen, Pres., pumps, screw machine parts. Completion est. 1956 or 1957. (E).

GEORGIA

Atlanta—Carling Brewing Co. (Cleveland, Ohio), beer, ale. (D).

Atlanta—Robert Gair Co., 1235 Chatahoochee Ave., N. W. (New York), corrugated boxes. Operation began 1955. (C).

Baxley—Miller's Dress Factory, dresses. (D).

Brunswick—Allied Chemical & Dye Corp., Solvay Process Division (New York), chlorine and caustic soda. Multi-million. Completion est. late 1956. (C).

Clayton—Clayburn Mfg. Co., shirts. Completion est. 1955. (D).

Commerce—O. E. Szekely and Associates, Inc., mechanical electronic equipment. Operation to begin late 1955. (C).

Dahlonega—Dahlonega Pine Tree Co., carpets. In operation 1955. (C).

Duluth—Thurmond Mfg. Co., Guy Thurmond, Pres., shirts. Operation began 1955. (D).

Ellijay—Davenport Hosiery Mills, Inc. (Chattanooga), J. T. Johnston, Pres., seamless nylons. $1 million. (C).

Jesup—Rayonier, Inc. (Plant #2), cellulose. $25 million. Completion est. late 1957.

Manchester—International Latex Corp., underwear. Operation began 1955. (C).

Metter—Metter Mfg. Co., women's blouses. Operation began 1955. (D).

Newnan—International Latex Corp., underwear. Operation began 1955. (D).

Roberta—Roberta Mfg. Co., ladies' and children's sportswear. Operation began 1955. (D).

Rome—Inland Container Corp., boxes. Operation began 1955. (D).

Savannah—American Syanamid Co., pigments. Operation began 1955. (C).

Savannah—Johns-Manville Corp. (New York), A. R. Fisher, Pres., roll roofings, asphalt shingles. $3 million. Completion est. late 1956.

Savannah—The National Gypsum Co., gypsum. $15 million. Completion est. March, 1956.

Savannah—Southern Nitrogen Co., John R. Riley, Pres., ammonia, nitrogenous solutions. $14 million. (C).

Thomaston—William Carter Co., (Needham Heigths, Mass.), underwear. In operation 1955. (D).

Tucker—E. I. du Pont de Nemours, paints, enamels, thinners. $6 million. Completion est. late 1956. (B).

Waycross—Scapa Dryers (Blackburn, England), dryer felts. $1 million. In operation late 1955. (C).

Waynesboro—Perfection Industries, Inc. (Cleveland, Ohio), John Gardner, Plant Mgr., cooking and heating appliances. In operation 1955. (C).

KENTUCKY

Albany—Albany Mfg. Co., men's shirts. $75,000. (D).

Burnside—T. N. Peck and Assoc., Inc., charcoal briquettes. $3 million. In operation 1955.

Bowling Green—Detrex Corp., synthetic drycleaning equip. $1.5 million. (C).

Burnside — Grissom-Rakestraw Flooring Plant, hardwood flooring. $50,000. (D).

Calvert City — Acetylene Chemical Products Co. (General Analine and Film Corp.), Dr. Hans Beller, Plant Mgr., acetylene derivatives. $6.5 million. Completion est. early 1956. (C).

Calvert City—B. F. Goodrich Co., acrylonitrile. $8.5 million. In operation 1955. (C).

Calvert City—General Aniline and Film Corp., detergents. $1.1 million.

Calvert City—Pennsylvania Salt Mfg. Co.,

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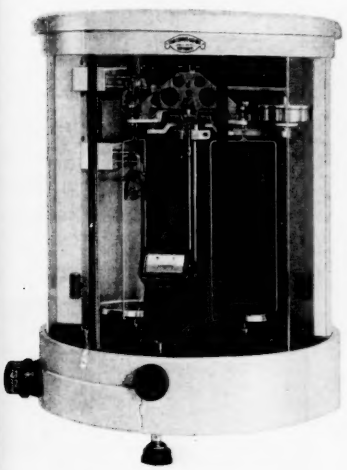

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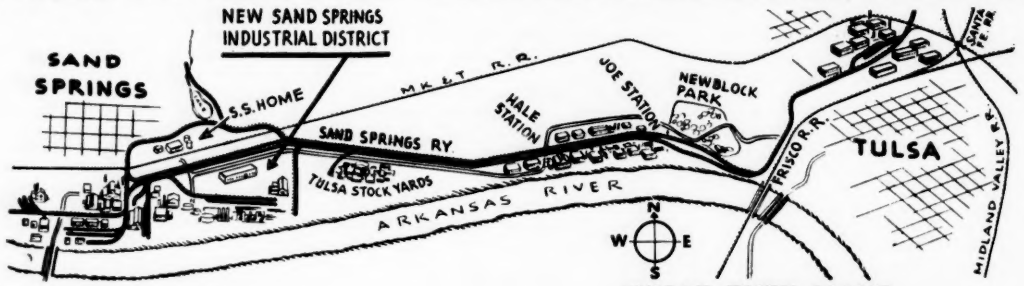

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organic flourine chemicals. $1.5 million.

Calvert City—Pennsylvania Salt Mfg. Co., postassium hydroxide. $1 million.

Clinton—Clinton Mfg. Co., jackets. $100,000. (D).

Corbin—United States Steel Corp., coal cleaning. $7.8 million. (C).

Elizabethtown—Elizabethtown Time Corp., Dudley S. Ingraham, Pres., timing devices. $300,000. In operation 1955. (C).

Erlanger—Michaels Art Bronze Co., Inc., non-ferrous metals, signs, parking meters, stainless steel. $100,000. (C).

Franklin—Franklin Mfg. Co., caps. $125,000. (C).

Georgetown—Electric Parts Corp. (Chicago), electric blankets. Completion est. 1956. (D).

Henderson—Eureka Plating Co., zinc die cast plating. (C).

Hopkinsville — Thomas Industries, Inc. (Louisville, Ky.), L. B. Thomas, Pres., residential lighting fixtures. $2 million. In operation 1955. (D).

Horse Cave—Horse Cave Mfg. Co., garments. $110,000. (C).

Lawrenceburg — Universal Button Co., zippers, metal buttons, button attaching machines. $85,000. (C).

Louisa—Louisa Box and Lumber Co., wood pallets and boxes. (C).

Louisville—Embry Container Corp., corrugated containers. $2.5 million. (C).

Louisville—Empire Homes, Inc., prefabricated houses. $5 million. (D).

Louisville—General Electric Co., air conditioners. $5 million. (D).

Louisville—Reynolds Metals Co., aluminum anodizing. $3 million. (D).

Louisville—Show-Pieces, Inc., furniture. (C).

Louisville—Stauffer Chemical Co., chloroform, methlyene chloride. $5 million. (B).

Louisville—Tube Turns Plastics, Inc., plastic pipe fittings, molded plastic products. $1.5 million. (B).

Louisville—Wilson Machinery and Supply Co., batteries. (C).

Maytown—Kentucky Hydrocarbon Co. (Ashland, Ky.), ethan, propane, butane, natural gasoline. $9 million. Completion est. 1957.

Middlesboro—Corunna Mfg. Co., Inc., television and radio cabinets. $300,000. (C).

Monticello—Monticello Shirt Co., shirts. $175,000. (D).

Owensboro—American Tobacco Co., Inc., cigars. $300,000. (D).

Russellville — Rockwell Mfg. Co. (Pittsburgh), gas water, parking meters, valves, machine tools. $1 million. (C).

Somerset—Advance Glove Co., plastic coating of gloves. (C).

Kentucky—Reynolds Metals Co., primary aluminum. $168 million. Plant site not definite but will be located in western Kentucky.

LOUISIANA

Baton Rouge—Copolymer Corp., A. L. Freedlander, Pres., butadiene. $10 million. (D).

Baton Rouge—Esso Standard Oil, reformed petroleum. $1.3 million. In operation 1955.

Gonzales—Dart-Winn Trousers, Inc., trousers. In operation 1955. (D).

Lake Charles—Lone Star Cement Corp. (New York), H. A. Sawyer, Pres., cement. $14 million. Completion est. late 1956.

Norco—Shell Chemical Corp. (New York), R. C. McCurdy, Pres., hydrogen peroxide. $7.5 million. Completion est. 1957.

Ruston—Lincoln Enterprises, Inc. $350,000. Completion est. late 1955. (C).

Sterlington—Commercial Solvents, nitroparaffins. $5 million. In operation 1955.

Westwego—National Gypsum Co. (Buffalo, N. Y.), wallboard, plaster. $6 million. (C).

MARYLAND

Baltimore—Esso Standard Oil Co., naphtha. $3.5 million.

Baltimore—The National Gypsum Co., gypsum. $15 million. Completion est. March, 1956.

Baltimore—Vulcan-Hart Mfg. Co., 3600 N. Point Blvd., W. M. Smock, Pres., commercial cooking equipt. $1 million. In operation 1955. (D).

Cumberland—Pittsburgh Plate Glass Co. (Pittsburgh, Pa.), plate glass of optical quality. $33.7 million. Completion est. July, 1956. (E).

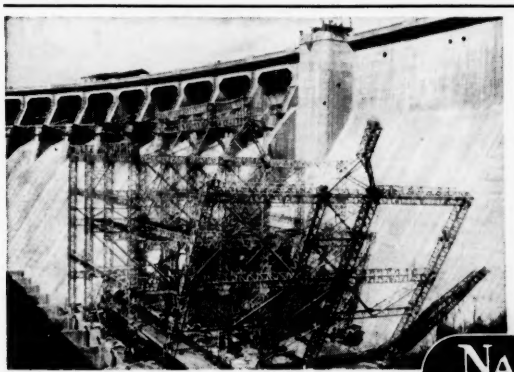
Curtis Bay—Davison Chemical Co. (W. R. Grace and Co., Baltimore), sulphuric acid, ammonia, sodium silicate, aluminum hydrate. $4 million. Replacing current units. Completion est. early 1956.

Frederick—Alpha Portland Cement Co. (Easton, Pa.). Has option on land and is making tests. No final decision has been made. (C).

Mt. Savage—Danmar Corp. (Cumberland, Md.), steel trusses and typewriter attachment eliminating use of carbon paper. Completion est. January, 1956. (C).

Marley Neck—The Glidden Co., titanium dioxide. $10 million. Completion est. May, 1956.

Rockville—Haynes Lithograph Co., lithographic printing. $1.5 million. Completion est.



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early 1956. (D).

Salisbury—Wayne Pump Co., gasoline pumps and related items. In operation 1955. (D).

MISSISSIPPI

Amory—Pullman Couch Co., furniture. In operation 1955. (C).

Brookhaven—Standard Wire Cloth and Screen Co. (York, Pa.), wire cloth. $1 million. Construction began 1955. (D).

Caledonia—Caledonia Mfg. Co., apparel. (C).

Canton—E and W Mfg. Co. (St. Louis, Mo.), men's shirts, ladies' blouses. Completion est. early 1956. (D).

Canton—American Tent Co., tents. (C).

Canton—Sklar Furniture Corp., furniture. In operation 1955. (C).

Clarksdale—American Hardware Co. $1.5 million. Completion est. early 1956.

Columbia—New Orleans Furniture Co. (New Orleans), furniture In operation 1955. (D).

Corinth—Castelton's, Inc., office supplies. (C).

Corinth—Rudolph Wurlitzer Co., pianos. (D).

Decatur—Decatur Shirt Corp. (Imperial Shirt Corp., New York), sport shirts. (D).

Grenada—McQuay, Inc. (Minneapolis, Minn.), Kenneth Lundberg, General Mgr. $1 million. In operation 1955. (D).

Hattiesburg—Funsten Pecan Co., food products. In operation 1955. (C).

Houston—Jackson Mfg. Co., W. R. Jackson, Pres. In operation 1955. (C).

Iuka—General Shoe Corp. (Nashville, Tenn.), Eli White, Division Supt., ladies' shoes. $300,000. In operation 1955. (C).

Jackson—Jackson Tile Mfg. Co., ceramic tile. Construction began 1955. (C).

Meridian—Kroehler Mfg. Co., dimension lumber. $2 million. (C).

Meridian—Meridian Mfg. Co., apparel. (C).

Natchez—Simpson Coal and Chemical Corp., anhydrous ammonia, vinyl chloride, $20 million. Completion est. mid-1956.

Natchez—Standard Ore and Alloy, acetylene, ammonia, vinyl derivatives. $20 million.

New Albany—Mission Appliance Co., gas heaters. (D).

Oxford—Chambers Mfg. Corp. (Shelbyville, Indiana), gas ranges. $2 million. Completion est. 1956. (D).

Picayune—Crosby Chemicals, Inc., tall oil intermediates. $2 million. In operation 1955.

Pontotoc—Dean Industries, Inc. (Chicago), furniture. Completion est. 1956. (C).

Pontotoc—Southern Industries, Inc., furniture frames. (C).

Richton—Mid-South Mfg. Co., Inc., work clothes. (C).

Tupelo—Super Sagless Spring Corp. of Mississippi, springs. Completion est. 1956. (C).

Tupelo—Morris Futorian Co. (Chicago), furniture. In operation 1955. (C).

Tupelo—National Spring Co. (High Point, N. C.), J. W. Jones, Plant Supt., springs and mattress assemblies. Completion est. January, 1956. (C).

Winona—McGregor, Inc., sportswear. Completion est. 1956. (D).

Winona—Windon Mfg. Co., sportswear. (D).

Yazoo City—Ely and Walker Mfg. Co., clothing. Construction began 1955. (D).

Yazoo City—Mississippi Chemical Co., ammonia. $5 million. In operation 1955.

NORTH CAROLINA

Albemarle—Collins and Aikman Corp. (New York), textile dyeing and finishing. (D).

Barber Junction—Grinnell Corp., humidification equipt. (D).

Bessemer City—Lithium Corp. of America (Minneapolis), Herbert W. Rogers, Pres., lithium compounds. $7 million. In operation 1955. (C).

Black Mountain—Kearfott Co., electric assemblies. Announced in 1954 and now nearing completion. (C).

Charlotte—Celanese Corp. of America, textile headquarters and experimental laboratory. (D).

Clinton—Sampson Electric Co. (Best Mfg. Co., Montclair, N. J.), speakers radio and television parts. Completion est. early 1956. (D).

Fayetteville—Fasco Industries, Inc., H. M. Sylvester, Jr., General Mgr., electrical equipt. Announced in 1954, with plans for completion in early 1956. (C).

Franklin—Burlington Mills Corp. (Greenville, N. C.), hosiery. $3 million. (D).

Gastonia—Hinde and Dauch (Sandusky, Ohio), corrugated containers. $2.5 million. Completion est. early 1956. (C).

Gastonia—Pyramid Electric Co., electronics. Announced in 1954 and now in operation. (D).

Granite Falls—Kohler and Campbell, Inc., Julius A. White, Pres., pianos. Announced in 1954, with plans for completion in early 1956. (C).

Greensboro—P. Lorillard Co., cigarettes. Announced in 1954. Construction now in progress. (E).

Henderson—Mount Hope Finishing Co. (Butner, N. C.), textile dyeing and finishing. (D).

Hendersonville—General Electric Co., outdoor lights. $7 million. Announced December, 1954, and completion set for 1956. (D).

Hickory—General Electric Co., distribution transformers. $20 million. Completion est. 1956. (E).

Lexington—United Furniture Corp. (Plant #2), Cloyd Philpott, Pres. Completion est. mid-1956. (D).

Newton—Prestige Chair Corp., furniture. (D).

Oxford—Granville Fabrics, textiles. (D).

Winston Salem—Western Electric Co., Radio Division, Lexington Rd., communication devices. Now in operation. (E).

OKLAHOMA

Enid—Champlin Refining, refined petroleum. $4 million. In operation 1955.

Pryor—Deere Chemical Co., ammonia. In operation 1955. $18 million.

Pryor—Midwest Carbide Corp., calcium carbide. In operation 1955. $3 million.

Tulsa—Hercules Portland Cement Co., Inc., cement. $2 million.

SOUTH CAROLINA

Anderson—True Temper Corp., fishing equipment. (C).

Barnwell—Amerotron, Inc. (Textron American, Inc.), woolen mill. $8 million In operation 1955. (D).

Bethune—Kendall Co., (Boston, Mass.), finishing plant. Completion est. early 1956. $5 million. (C).

Calhoun Falls—Rocky River Mills. (D).

Carlisle—Cone Mills, finishing plant. In operation 1955. $5 million.

Charleston—Bird and Son, Inc., roofing and granule. In operation 1955.

Chester—Fuller Shirt Co., William T. Fuller, Pres., shirts. Completion est. 1956. (C).

Clearwater—Marine Minerals, Inc. (Chicago), Robert F. Griffith, Plant Supt., rutile, ilmenite, zircon, monazite, staurolite. $1.2 million. In operation 1955. (B).

Clover—Hudson Hosiery Co. (Charlotte, N. C.). (D).

Columbia—Columbia Brick and Tile Co., brick. (C).

Easley—Saco-Lowell Shops (Biddleford, Maine), textile machinery. Multi-million.

Fountain Inn — Robinson Sportswear, sport shirts. In operation late 1955. (C).

Irmo—General Electric Co. (Schenectady, N. Y), electrolytic capacitors. $6.4 million. Completion est. late 1955 or early 1956. (D).

Jamestown — Santee River Wool Combing (Woonsocket, Rhode Island), Joseph Milaszewski, Plant Supt. In operation 1955. (C).

Johnston—Riegel Textile Corp. (New York), D. J. Gray, General Mgr., diapers, pillowcases. Completion est. 1956. (D).

Landrum—Rhode Island Textile Co., (Pawtucket, R. I.), braid, laces, venetian blind

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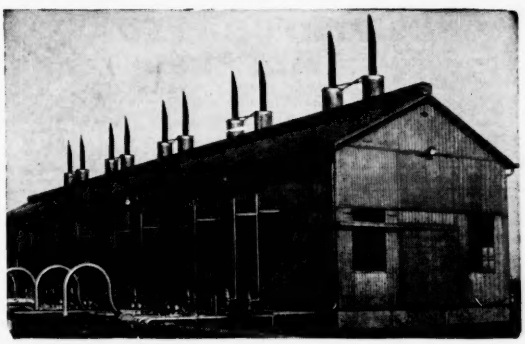

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cords. $100,000. Completion est. early 1956. (C).

Landrum—Landrum Mills (Bigelow-Sanford, New York), velvet carpet. Completion est. mid-1956. (D).

Mauldin—C. F. Sauer Co. (Washington, D. C.), mayonnaise. $1.5 million. In operation late 1955.

Pickens—Pickens Electric Mfg. Co. (Springfield, Ill.), electric components, capacitors. $1 million. In operation 1955. (D).

St. Stephens—Albany Felt Co. (Albany, N. Y.), industrial felts. $1 million.

Saluda—Carolyn Chenilles, textile. (C).

Simpsonville—Dewey and Almy Chemical Co. (W. R. Grace and Co., New York), cryovac plastic bags. $1 million. In operation late 1955. (D).

Spartanburg—Kohler Co. (Kohler, Wisconsin), pottery. $5 million. (D).

Sumter—Model Dye Southern, Inc., $350,000. (C).

Williamston—Martin Mfg. Co., clothing. (C).

TENNESSEE

Chattanooga—Cramet, Inc. (Crane Co., Chicago), John L. Holloway, Pres., titanium sponge and ingots. $25 million. In operation 1955. (D).

Chattanooga — Central Soya-McMillan Feeds. $6 million. In operation 1955. (C).

Chattanooga—Heavy Minerals Co., rare minerals. $3 million. Completion est. 1956. (C).

Crossville—Five Star Garment Shirt Co., shirts. In operation 1955. (C).

Fayetteville—Jonathan Logan Co. (New York), dresses. Completion est. 1956. (D).

Jamestown—Sol Berger Associates, shirts. Completion est. early 1956. (D).

Lafayette—Macren Shirt Corp. (Imperial Shirt Corp., New York). In operation 1955. (D).

Lawrenceburg—Murray-Ohio Mfg. Co. $2 million. Completion est. early 1956. (D).

Loudon — Visking's Food Casing Div. (Visking Corp.), Howard R. Medici, Pres., sausage and frankfurther casings. Multi-million. Completion est. mid-1956. (C).

Memphis—Atlas Powder Co., Bob Bennett, Mgr., food emulsifiers. $1.1 million. Completion est. late 1955.

Memphis—Cardox Corp., Millington Road (Chicago), C. M. Whittington, Mgr., process carbon dioxide gas. $1 million. In operation 1955. (B).

Rockwood—Tenn. Products and Chemical Corp., ferrosilicon, ferrochrome. $2.5 million. Completion est. late 1956. (C).

Martin—Merit Clothing Co. (Mayfield, Ky.), Ray Keisey, Vice Pres., men's clothing. In operation 1955. (C).

Mt. Pleasant—Maury Mfg. Co., shirts. Completion est. 1956. (D).

Paris—Clippard Instruments Co., radio and TV parts. (C).

Sparta—Pacific Coat Hanger Co., wooden coat hangers. (C).

Woodstock—Grace Chemical Co., anhydrous ammonia, urea. $20 million. In operation 1955.

TEXAS

Arlington — American Can. Co. (New York), cans. Completion est. 1956. (C).

Beaumont — Texas Eastern Transmission Corp., compressor station. $1.5 million.

Beaumont—Aviation Fuels Co., high octane aviation gasoline. $8 million. In operation 1955.

Beaumont—E. I. Du Pont de Nemours, "Hypalon" chemical rubber. Multi-million. Completion est. early 1957. (B).

Coke County—Texas Natural Gasoline Corp., natural gasoline. $2.2 million.

Corpus Christi—North American Petroleum Corp., P. O. Box 968, Victor Ver-Milyea, Pres., $1 million. Construction began 1955.

Corsicana — American Rockwool Corp. (Chicago), James R. Addington, Pres., insulation. $1 million. Completion est. mid-1956.

Corsicana—Haggar Slacks, J. M. Haggar, Jr., Pres., men's and boys' slacks. Operation began July, 1955. (C).

Dallas—Continental Electronics Mfg. Co., 4212 Buckner Blvd., James O. Weldon, Pres., television transmitter equipt. (D).

Denton—Denton Shoe Corp., Morty Freedman, Pres., Handsewn loafers. In operation 1955. (C).

El Paso—Radioplane Co., Whitley C. Collins, Pres., drones and missiles. $1 million. Completion est. January, 1956. (C).

El Paso—Tempron Corp., Dr. J. F. Berliner, Pres., hardboard items. $5 million. (D).

El Paso—Standard Oil Co., reformed petroleum. $2.7 million. Completion est. late 1955.

Eldorado—Sinclair Oil & Gas Co., Hulldale Field, natural gas. $3.9 million.

Fort Worth—Southwest Airmotive Co., Carter Field (Dallas), Harlan Ray, Pres., jet engine overhaul. $3 million.

Fort Worth—Menasco Mfg. Co. (Burbank, Calif.), Henry P. Nelson, Pres., aircraft landing gears and missile components. $5 million. Construction began in 1955. (D).

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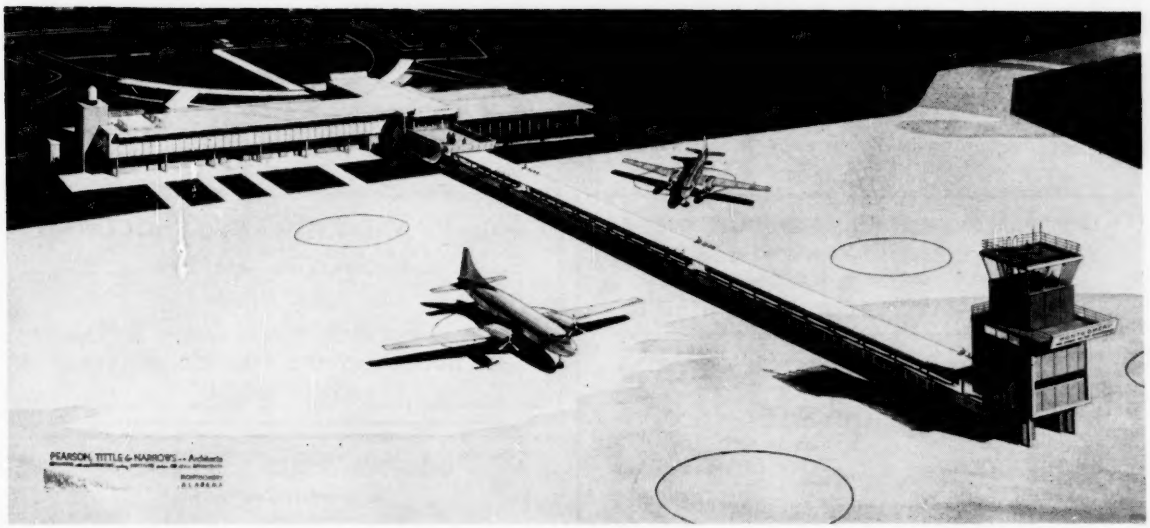

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Houston—Metropolitan Bottling Co., Inc. (subsidiary of Pepsi-Cola Co.). $1 million. Operation began April, 1955.

Houston—Texas Butadiene and Chemical Corp., K. D. Bowen, Vice Pres., butadiene. $29 million. Completion est. late 1956. (C).

Houston—United States Gypsum Co., 3272 Westheimer (Chicago), gypsum. $20 million. Construction began 1955. (C).

Ingleside—Sunray Mid-Continent Oil Co., and Assoc., gasoline. $3 million. In operation 1955.

Jacksonville—Nichols Industries, Inc., Talley W. Nichols, Pres., toys. In operation May, 1955. (C).

Kilgore—Alliance Ware, Inc. (Alliance, Ohio, C. J. Rodman, Pres.), forms for sanitary ware. $1 million. Completion est. late 1955.

Kimball—Kimball Gas Products Co., high press absorption type gasoline plant. $1 million.

Lufkin—T. L. Smith Co., R. W. Smith, Pres., concrete mixers. (C).

Marble Falls—Mathes Mfg. Co., air conditioning equipt., bedroom furniture. (C).

Marshall—Woodlawn Processing Co., natural gas. $1.3 million.

Midland—Cities Service Oil Co., gas processing. $7 million.

Orange—Spencer Chemical Corp., polyethylene. $14 million. In operation 1955.

Orange—Texas Portland Cement Co. $2.7 million. Under construction.

Rosenburg—Standard Sulphur Co., sulpur. $1.5 million. Construction to begin 1956.

San Antonio—American Potash and Chemical Corp. (Los Angeles), Peter Colefax, Pres., lithium chemicals. $8 million. To be in operation 1956. (C).

Silsbee—American Republics Corp., gasoline recycling plant. $1 million. In operation 1955.

Stamford—Feldt Mfg. Co., Max Feldt, Pres., moccasins, western wear. In operation 1955. (C).

Sweeny—Phillips Chemical Co., ethylene. $10 million. Construction began 1955.

Texas City—Heyden Chemical Corp., Monsanto Chemical Co., methanol. $20 million. In operation 1955.

Tyler—National Homes Corp. (LaFayette, Ind.), James R. Price, Pres., prefabricated homes. $1 million. In operation mid-1955. (D).

Tyler—General Electric Co., S. J. Levine, Mgr., home cooling units. Completion est. Fall, 1956. $15 million.

Waco—Phillips Chemical Co., (Bartlesville), JATO's. Completion est. early 1956. Multi-million.

Waco—Norris-Thermador Co. (Los Angeles), K. T. Norris, Pres., steel rocket cases for JATO's. Completion est. early 1956. (C).

Waco—Pure-Pak Co. (International Paper Co.), paper milk containers. $500,000. In operation 1955. (C).

VIRGINIA

Blackstone—Velvet Textile Corp., plush goods. (C).

Chesterfield—Allied Chemical and Dye Corp., (P.O. Box 831, Hopewell, Va.), nylon-6 type fiber molding polymer. In operation 1955. (D).

Franklin—Hercules Powder Co., crude tall oil, resins, fatty acids. Multi-million. Completion est. early 1956.

Iron Gate—Virginia Rubber Corp., mechanical rubber goods. (C).

Lynchburg—General Electric Co., Route 29, rectifiers. $5 million. Completion est. early

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Pulaski—Pulaski Veneer and Furniture Corp., dining room and bedroom furniture. (D).

Richmond—Reynolds Metals Co. (Louisville, Ky.), aluminum. $3 million.

Roanoke—Miller Container Corp., corrugated boxes. (C).

Salem—General Electric Co., industrial control equipment. (D).

Sunbright—Foote Mineral Co., lithium hydroxide. $2 million. In operation 1955.

Waynesboro—General Electric Co., relays, programming systems. Multi-million. In operation 1955. (D).

Warsaw—Levi Strauss and Co. denim products. Construction began 1955. (C).

Winchester—United Flat Glass Corp., sheet and plate glass. $16 million.

Yorktown—American Oil Co. (New York), Donald J. Smith, Pres., gasoline, fuel oils. $25 million. Completion est. late 1956.

WEST VIRGINIA

Belle—E. I. duPont de Nemours and Co., synthesis gas. $4 million.

Bluefield—Thayer, Inc., juvenile furniture. Completion est. 1956. (D).

Buckhannon—Reidbord Brothers, apparel. (C).

Long Reach—Linde Air Products, silicones. $14 million. Completion est. early 1956. (D).

Moundsville—National Analine Div., Allied Chemical and Dye Corp., aniline, nitrobenzene. Multi-million. Completion est. 1956.

Natrium — Columbia-Southern Chemical Co., titanium tetrachloride. $5.5 million. In operation 1955.

Natrium — Columbia-Southern Chemical Co., ammonia. $3 million. In operation 1955.

Natrium—Mobay Chemical Co., isocyanates. Multi-million. (C).

Point Pleasant—Celanese Corp. of America (Newark, N. J.), plasticizers. Multi-million. Completion est. early 1956. (B).

Ravenswood—Kaiser Aluminum and Chemical Corp., aluminum sheet and foil. Multi-million. Completion est. 1956. (E).

Ravenswood—Kaiser Aluminum and Chemical Corp., aluminum reduction plant. $120 million. Announced by Kaiser December 4. Completion est. 1957. (E).

South Charleston—Food Machinery and Chemical Co., anhydrous ammonia. $2.5 million. Completion est. late 1955.

Willow Island—American Cyanamid Co., platinum catalyst. $1.5 million.

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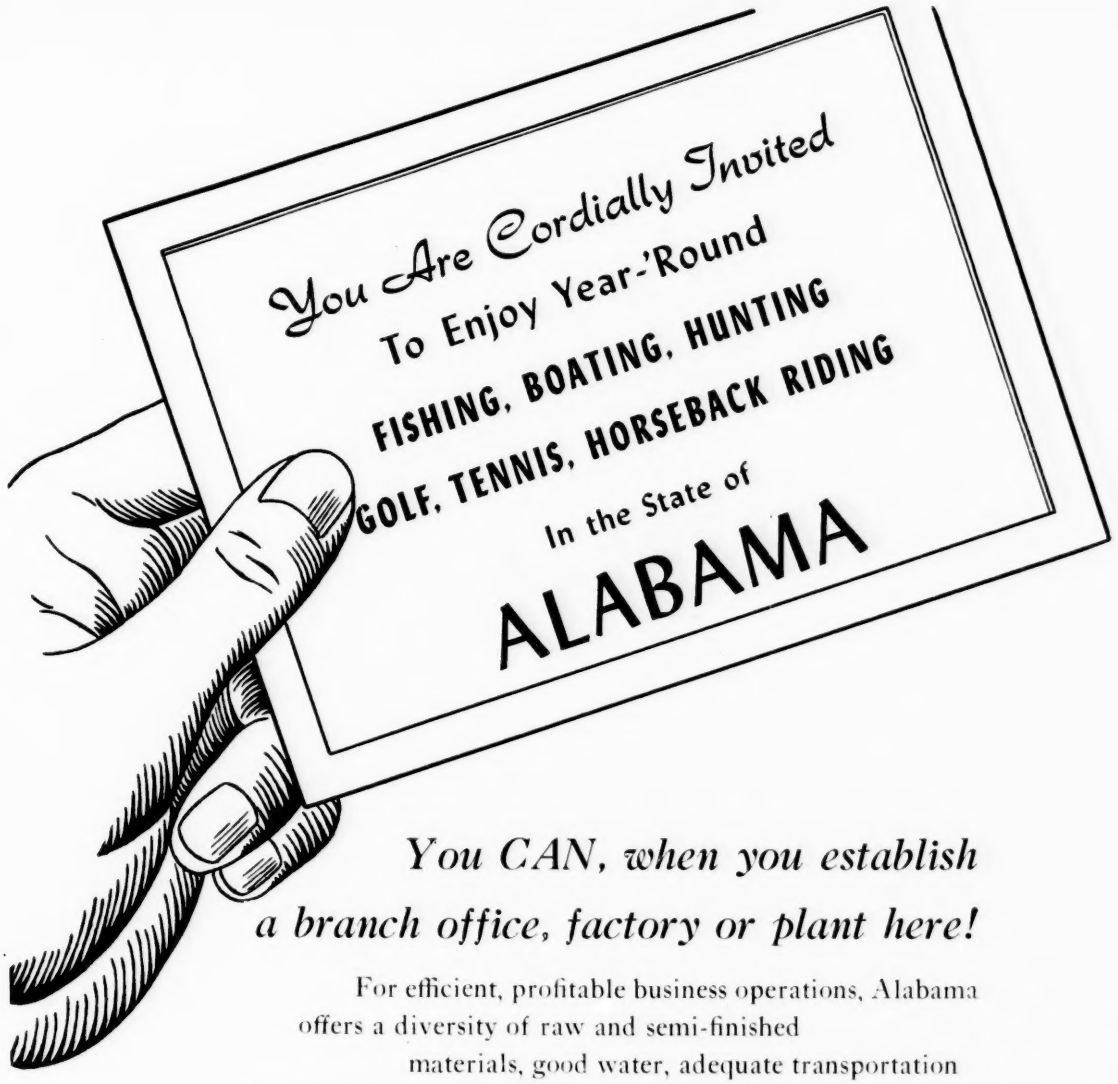

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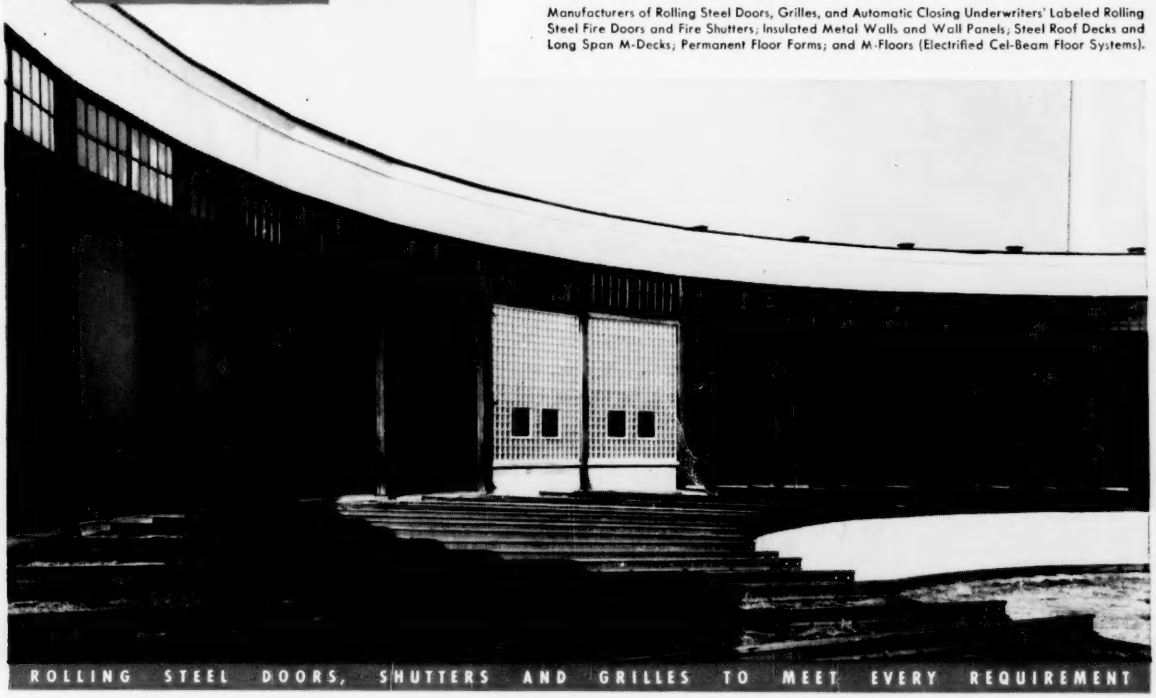

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